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Forests, Waters,  
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APRIL

1909



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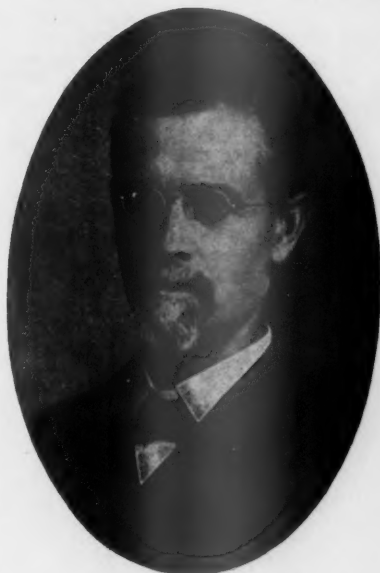
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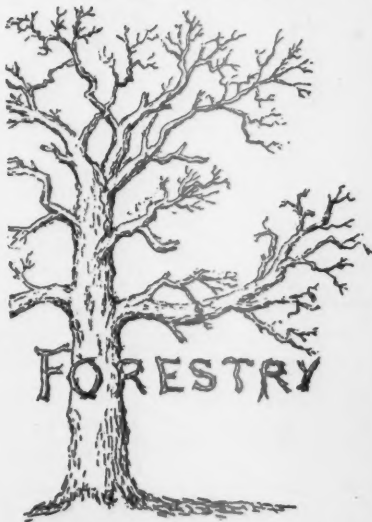
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The American Forestry Association was organized in 1882, and incorporated in January, 1897. It now has nearly 7,000 members, residents of every State in the Union, Canada, and foreign countries. From its organization it has been the tireless friend of the forests.

The object of the Association is to promote the preservation, by wise use, and the extension of the forests of the United States; its means are agitation and education; it seeks to encourage the application of forestry by private owners to forest holdings, large or small; and it favors, especially, the establishment and multiplication of National and State forests, to be administered in the highest interests of all.

The Association seeks as members all who sympathize with its object and methods, and who believe that our natural resources constitute a common heritage, to be used without abusing and administered for the common good. Seeking to conserve our supplies of wood and water, the Association appeals especially to wood-producers and users, including owners of wood lands, lumbermen, foresters, railroad men, and engineers; and to those dependent upon equable stream flow, as manufacturers, irrigators, employers of water power, and those engaged in internal commerce.

The Association meets annually in Washington. It publishes, monthly, *CONSERVATION*, the magazine of authority in its special field. The list of contributors to this publication includes practically all persons prominent in forest work in the United States, making it alone worth the cost of Annual Membership in the Association.

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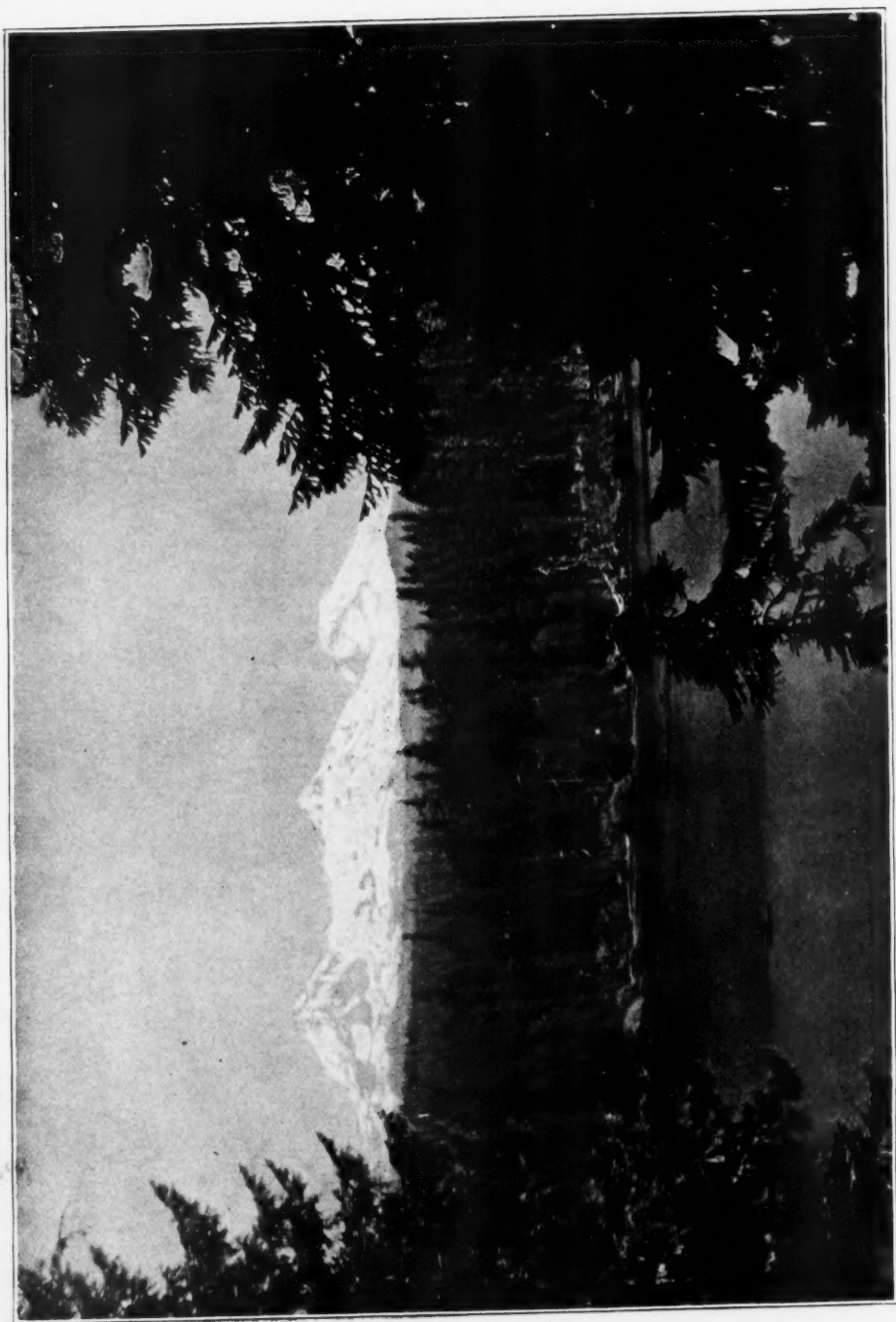
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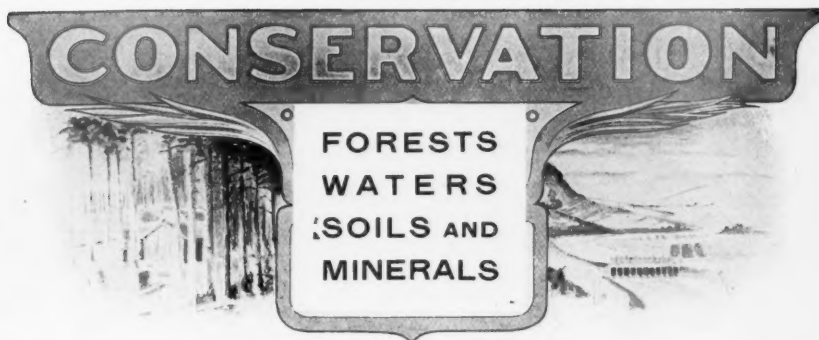
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The Three Sisters, from Fish Lake, Cascade Forest Reserve, Oreg. The Timber is Alpine, Fir, and Bull-pine



Vol. XV

APRIL, 1909

No. 4

## WORK ON A NATIONAL FOREST

### No. 10. Dealing with Frontier Communities

By CHARLES HOWARD SHINN, Supervisor, Sierra National Forest

IT HAS been many months since I could find time for another of these glimpses of our problems up here among the rocks of Sierra. New and interesting phases of life present themselves almost every day, and of course, the larger policy questions are always with us.

When I look back along the busy months since the first article of this series appeared in print, I begin to understand with more definiteness how intimately all that I have written from this forest is related to actual events here, to our secret undercurrents, to the changing airs of our spiritual atmosphere, and indeed, to the very warp and woof of our perpetually fascinating struggle with the demons of doubt and chaos as we carry forward the bronze tree symbol of the Service.

The intelligent filing clerks, glancing, no matter how swiftly, over correspondence from any forest, must inevitably seize an impression as of the ebb and flow of tides, good or bad, sometimes in grazing matters,

sometimes in timber, very often in regard to lands or special uses. Of course, the chiefs of divisions in their weekly conferences discuss, among all the routines, these occasional neaptides of tumult, which whirl and glisten like very maelstroms, funneling wild seas clear down to the primeval rocks of human nature; these young and fire-hearted chiefs can perhaps trace back all such tumults to the smallest of beginnings in local ignorance and misunderstandings.

At other times, how smooth and fair the placid waters of life move on in their appointed channels; the filing clerks have merely routine work, dull, safe, and pre-eminently proper, coming to their methodical hands from that serene forest. Then, of a surety, one may sit down and write little stories as of Robin Hood camp-fires, and indulge in a chapter of "New Worlds for Old" at lunch-time.

"Blessed is that nation," wrote a philosopher once, "that has no history;" and, as I remember, time was

when I accepted and rejoiced in the saying as one that was full of ripe wisdom. But one night my thoughts ran back along the pathways, half dream, half vision, and I saw such a land, wrapped in age-long peace and forever past its struggles. The very power to make history had perished, and, even in my sight, the people fell apart as a loosened fagot of dry branches gathered by an old peasant woman in a Thuringian forest—and that nation ceased to be. "Blessed is the Service," to make our new saying, "that goes on unresting, unhasting, adding strength to strength and wisdom to wisdom, age after age, and making many volumes of history all its own.

Really then, the very essence of all these primitive studies of mine—of these leaflets from the "Book of Beginnings"—is that they *must* move on and on with the actual currents of our lives and our work. They cannot always discourse prettily of ranger-lads, mountain horses, shake-makers, and forest fires. More and more, as the years pass, we are brought up against all those larger problems, social and economic, which are related to good government. Let us be truly glad that it is so, my gentle reader; that in every forest, in every community, in every honest effort to create new and better conditions, are the seeds of honest differences of opinion, and all the materials for a first-class conflagration.

Even forest officers, riding forth like Froissart's knights, a-carolling down the woodland ways, or sitting among their bluff companions in their sage-green doublets (new uniform, twenty-two ounces, etc!) underneath Lambertian Pines—even these mighty personages have had their bad quarters of hours, as they toiled to make safe and broad those all-essential trails and roads of thought and sympathy which link us to each other and to the whole outside world, until we, and our neighbors near and far, become one in regard to many vital things. We cannot use pickaxes, crowbars, and giant powder on these primal roads; we

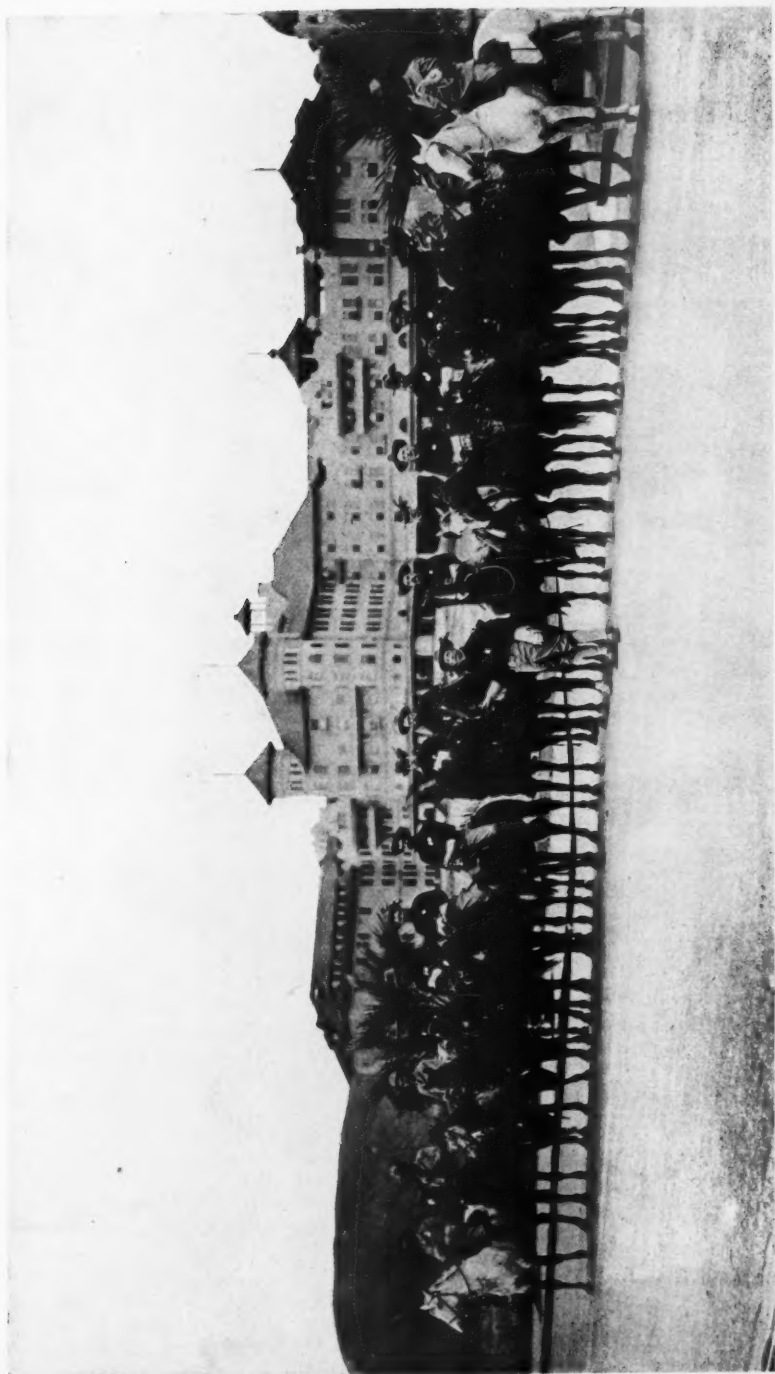
build them somehow, by every word and act; we maintain them at a great—and yet a most reasonable—expenditure of brain-cell and nerve-force. One must have a way open from heart to heart, here and there, all over a forest, or the most accurate records, the most methodical bookkeeping, the strictest of Use Book obediences will not save the forest-city in its hours of peril, when cloth-yard arrows are singing through the air like a swarm of yellow-jackets.

Nearly all of us are dealing with exceedingly attractive frontier communities, representing every conceivable type of American character on its most independent and out-spoken sides. And certain occurrences in recent months "along the fighting line" have set me the age-old human problem once more.

I think that one learns at last the utter wisdom of evading every sort of introspection—the whences, wherefores and whithers, the musty theological paradoxes, and the theses of the medieval school men. I think that a forest officer must neither let himself say, "Am I a success?" nor, "Am I a failure?" Both are wastes of energy, and not within his sphere of determination. But I do think that he should very often face the larger human problems: "Am I doing the very best that I can for each and all of the little independent communities scattered here and there through the forest?" "Is the best that I can do, high enough to fill the very high requirements of the changing and growing situation?" One's human trails strike miles of iron-wood brush; one's human roadways run up against basalt and obsidian; snow-slides and mountain floods sweep down one's rough-and-ready bridges; signal-fires from peak to peak sometimes warn one that there is still a spirit of dissent abroad. Then it is high time to size up the general problem once more.

Doing this, in all humility, with all patience and self-separation, one comes at last, I am led to believe, to an unshaken conception of the purely human side of an American forest offi-





Forest Rangers from Pine Mountain and Jaca Lake Forest Reserve, Who Acted as President Roosevelt's Special Escort at Santa Barbara, Cal.  
Col. Willis M. Slosson, Superintendent of Forest Reserve, Dismounted

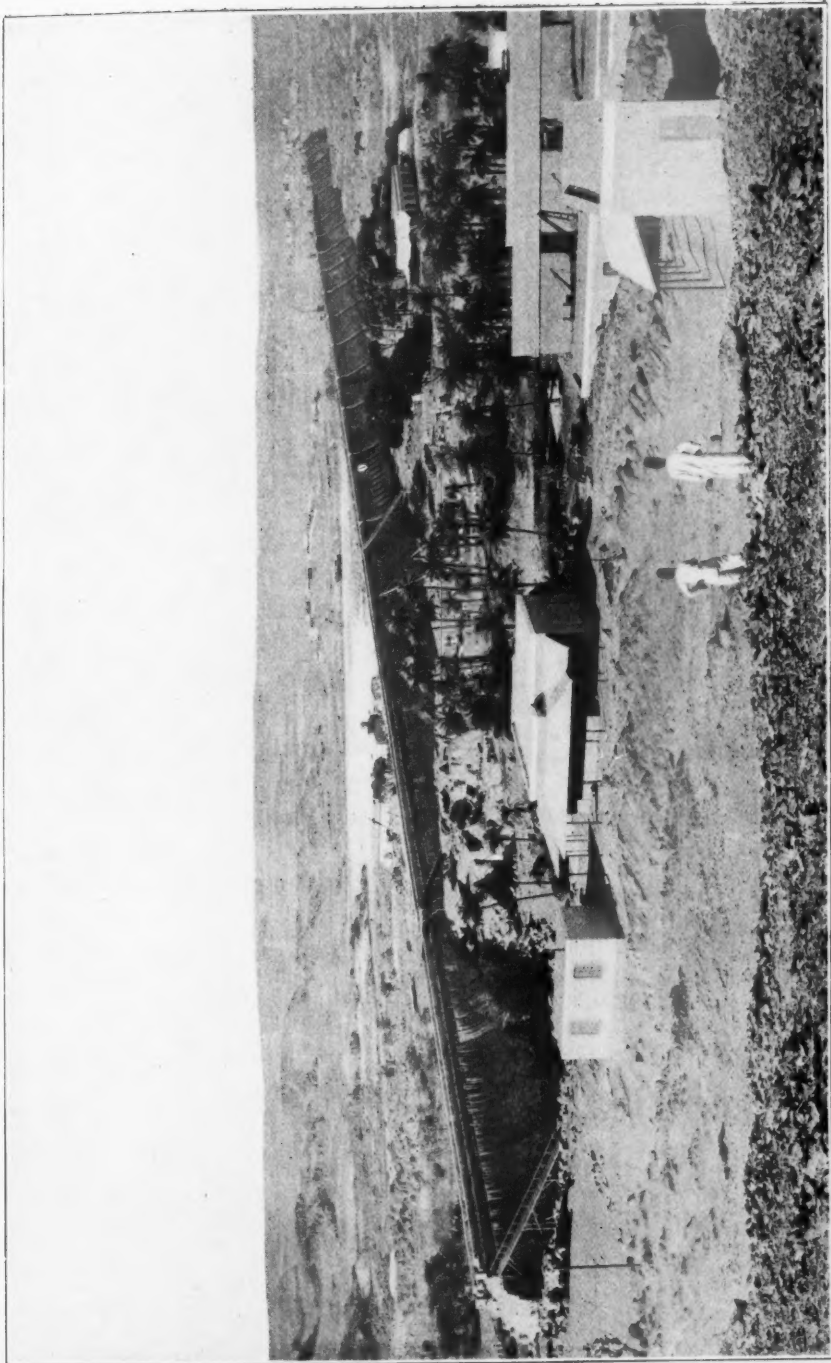
cer's work as constituting, on the whole, the alpha and the omega of the task to which we are set. Now and then I tell myself that the very highest value of a first-rate Forest Service in this day and generation is not so much timber, or grazing, or even conservation of water, great as all these are, now and forever. May it not be that we are in a fair way to shape and create that especial thing which America has hitherto in some degree lacked—the union, harmony and higher civilization of many and scattered mountain communities? I would not press this thought too far and thus wreck it in some word-desert, but I think it will bear consideration.

True, we are not policemen, nor teachers, nor even humanitarians. We are merely forest-workers, forest-makers, imperfectly equipped, brought up against new issues daily and hourly, and making all sorts of precedents for those more capable men of the future, those children spiritually sprung from our very loins, and carrying, for all time to come, the passwords of our earlier camps. Each of us all, in his own rude way, must learn so to deal with the frontier communities within or near to his forest, that they shall be helped and not hindered in the long run, by his labor as the local administrator of the Service. In the long run, too, these communities must come to know beyond peradventure that they *are* being so helped upward and onward in their progress toward a finer civilization. No one can truly accomplish this in a day, nor in a year, and in many places the work of a lifetime will be needed to lay true and square the cornerstones of our Temple of Forestry.

Least of all dare we to even think of ourselves as "reformers." Let Paul continue to plant and Apollos to water, and He that giveth the increase will at last bring our broadcast sowing of the seeds of human fellowship through all our frontier communities, from the Mexican borders to the isles of Alaska, into a golden and heavy-headed harvest.

Like Lord Cromer, each forest officer—whether an isolated ranger, thrown so often on his own resources, thumbing nightly his dimly-understood U. B., or a well-equipped supervisor, with his still larger responsibilities—is sent to a very Egypt, to a land where the brooding Sphinx looks far out over the yellow desert, serene, eternal, and asks of each wayfarer in those immense wastes the waiting question that was meant for him, and for none other, from the birth-hour of time. Lord Cromer heard, understood, and accepted the Burden of Egypt, and of her ancient peoples. Through days of good repute and of evil repute, through plots and counterplots, through slanders and abuse, and memorable upheavals he toiled on unanswering, unembittered, doing the Work of Egypt. Thus it came to pass, when he was old and worn out, that the foundations were truly laid. Thus is he remembered in world-history, not for the Assouan Dam, not for the cotton-fields and mills, not for the tawny, corporal-trained Egyptian soldiers in the Soudan, not even for his own marvelous financial genius; but chiefly because he was the slow, patient, persistent organizer of hundreds of struggling, ignorant, suspicious, and alien little village-communities scattered all over Egypt, into something like a working whole.

That was really great! That was to be one of the mighty line of modern pro-consuls, English or American, who are shaping half-savage colonies into the beginnings of states and nations. One puts in the list Lord Dufferin and President-elect Taft; and I, for one, very gladly put Sir Dietrich Brandis there. I have learned a little of the forest-peoples of India and their village laws, usages and forest rights, and I can dimly guess at the vast complexities of the task which Brandis accomplished in dealing so well with those millions of hungry, suffering aliens. Yes! India's great forester was somehow so endowed by the high gods that he faltered no whit through all those wrestling years, until he disentangled and slower knit together, in equitable and



The Nile Reservoir Dam at Assouan, Egypt!

durable manner, the whole fabric of forest-village life.

But the genius of our American institutions requires that administrators of public trusts, such as a forest, deal with the local problem according to other methods than the methods of Cromer and Brandis. All of the frontier communities form parts of the various counties and states, and are often American clear through. We belong to them, and they belong to us. Cromer and Brandis governed by obedience, in letter and spirit, to Equity; we, striving no less for Equity, must ever make that Equity plain to plain men. We appeal constantly to reason and good will. Sometimes the most supreme tact cannot avoid an issue without sacrificing a principle. In such cases a forest officer must stay with the principle, must sustain the issue at any cost of public criticism, sure that he will be justified in the end, even by many (if not by all) of those who have attacked him.

The underlying issues which are raised with more or less distinctness by many persons in frontier communities are exceedingly simple. They have to be understood, separated from irrelevant problems, and made very plain to one's own mind first, in order that they can be cheerfully met from time to time. The rangers are troubled by them, and often fail to think them out, so that excellent ranger material may be lost to the Service if a supervisor fails to discuss these things with entire freedom and justice.

The primary frontier issue with the forest is that, away down in the bottom of his heart, many a real, old-fashioned mountaineer does not sympathize at all with the setting apart of National Forests. He does not see any reason in trying to conserve the natural resources of his region; he considers, in fact, that there are none too many such resources for the present generation, and more particularly not anything more than he wishes to use himself. He says in effect, and when with his own kind he says very often and with emphasis, about this sort of thing:

"It is downright wicked for Eastern-

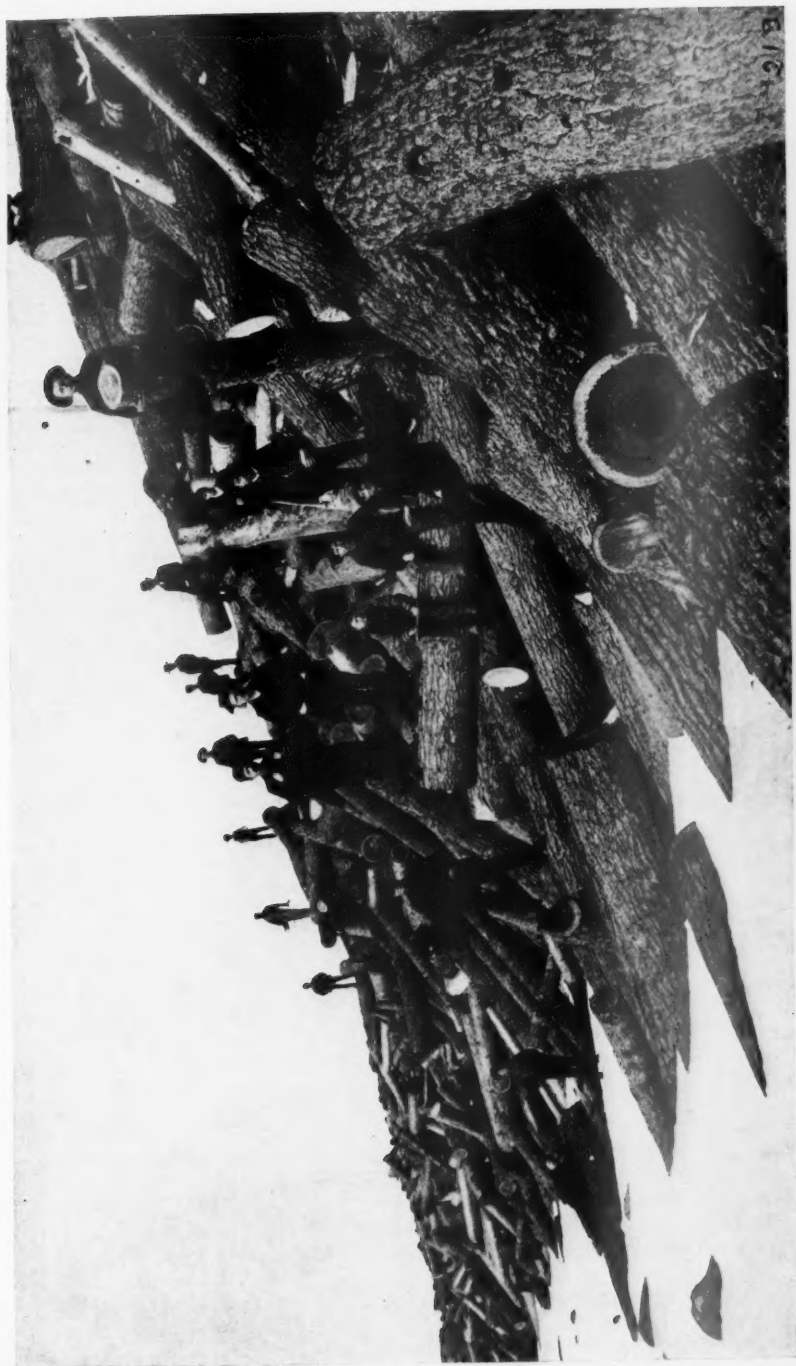
ers, an' city folks, an' rich tourists, an' millionaire lumbermen, an' power-plants to get up this here forest scheme to take our rights away from us. This region belongs to us. Our fathers settled here in the rocks fifty years ago. There ain't nuthin' to spare for the outsiders. We want to 'take up' any timber land there is; we want to cut trees when and where we please; we want to burn brush in summer; we want to run our cattle any old way we like, without paying a grazing fee. We do not want any game laws; we do not want to go to any officer for permits, nor have regulations of any sort put up over us by men living somewhere else. We have to live here, and all we want is to be let alone."

I think that perhaps I have been more fortunate than many supervisors in being able to get at precisely the frame of mind of many mountain people about the forest idea. I heard much of this kind of thing long before I came into the Service, twelve and fifteen years ago, when President Cleveland first established reserves and parks. I used to go camping in the Sierras and talk with many mountain people about forestry and a forest system for America. The underlying question in nearly every mind was a very human one: "How would such a thing affect me personally?" And the almost universal conclusion was that whatever lessened the freedom of the mountain realm was wholly bad.

"Once," said one of them to me regretfully, long ago, "I could ride from Tejon Pass, north through the foothills of the Sierras, clear to Shasta, more than 700 miles, and never strike a fence."

"Before the forest was established," said another fine old mountaineer to me, not a year ago, "any of us fellows had all sorts of chances that we don't have now. A lot of things that we always held belonged to us as a right, are taken away."

He did not necessarily mean that it was less safe to shoot deer out of season, or track them in the deep snows. He did not necessarily imply that the



The Drive. A Jam Overtaken by a Lake Freeze



chances of putting a fraudulent homestead claim in splendid pine timber were gone forever. He meant a lot of little things, the taking the lumber from an abandoned cabin, the securing a little deserted orchard somewhere, the grazing of a small band of goats or sheep. Such men as these must be handled with the utmost skill and patience. Time and good will are the elements of the game.

There was once a mountaineer who owned a few head of cattle. He refused openly to take out a permit. He kept on friendly terms with the supervisor and all the rangers, and every one liked him, too. But he said that the regulation was nonsense and that he needed the \$2 more than the Government did. It put the supervisor in a hole, for the mountaineer was vastly popular, and yet the offence was flagrant. Should he be arrested and taken into court for \$2? Should his fee be paid by the supervisor, and a receipt sent him with a letter explaining that somebody had to do it, and that in all other respects he was too good a man to be hastily dealt with?

Just then the mountaineer's cattle broke down the supervisor's fence one day, and two of them, worth over fifty dollars, ate nitrate out of a sack of garden fertilizer under a shed, which killed them incontinently; and they were buried where they fell in the coming orchard by the meadow.

The mountaineer said "he couldn't blame nobody." "But," he added, "I expect ye might balance them steers agin that two dollars that ye thinks I owe ye fur a permit."

These things may seem trivial, but really they are not, because after awhile more serious issues come up. Neither ten nor a hundred mountaineers will ever break out into open war against a forest on these little items, nor on the general basis of inability to see the local value of a forest system. But after awhile, in one corner or another, a few men, from motives of self-interest, work deftly upon this raw material; it smokes a while, then it bursts into

flame. A local politician wants an issue that leads men's thoughts from something more dangerous; a land-claimant has good reason to believe that his papers will be cancelled; a stock man desires to be allowed to run more cattle than the forest officer thinks best for the range, or fair to other neighbors.

In a thickly settled and prosperous region, time, experience and intelligent leadership have developed systematic methods of sifting baseless charges and foolish complaints from any genuine grievances which such a community has learned to present with force and dignity, through the proper channels. But the mountaineer, when stirred up, justly or unjustly, too often uses every available weapon, burns all his powder, and acts on the old principle that if one only throws enough mud at his opponent, some of it is sure to stick.

A supervisor of my acquaintance was once met by a highly excited friend, who said: "I nearly thrashed a couple of men on your account. There were a lot of teamsters down in the village. They were talking about you, and one of them said that you were in the habit of burning the cabins of poor, inoffensive Indians. Then another said that he heard that you had been arrested by a Government detective for stealing over \$2,000,000 last year from the income of your forest. And both those men knew that you handled no Government money; that all the checks came from Washington. Both of them had teamed for the Government, and had been promptly paid. And both of them said you were a square man.

A little more questioning showed the supervisor that both these stories had been originated by a little group of land claimants, whose so-called "homesteads" were being "brought into court." It was merely a part of the price which one pays as he goes along, for the privilege of making things better and not worse. The supervisor (and his superiors) had philosophy enough to laugh about it, and the supervisor remarked that he fortunately

belonged to the natural order Pachydermata.

To be a forester in this day and age is to be a man who has a profound capacity for forgetting all unhelpful personal criticism. He must not pick it up, nor listen to talebearers and gossips. He must treat all men with equal fairness, and must carry no personal feelings into his daily business. Good literature is the refuge in all hours of storm, and most of all, the great lyrics and epics, the tales of heroes, and the vast dramas of human existence. There was once an astronomer up on Mount Hamilton, at the Lick Observatory, who used to tell me that five years of star-gazing lifted one "above all the flea-bites." Five years of forestry, of association with pines and mountains, ought to do as much as this for a man.

But let us not unduly exaggerate the frontier problems, for they lessen every year and our men are not afraid to meet them. Gentleness and justice long, very long, continued will ripen at last into permanent relations with each and every one of the frontier communities. The growing forest will give employment to more people, homes will increase, better schools and more churches will be established, telephones and railroads will bring in new ideas, and increase prosperity. Many an old superstition, many an ancient prejudice will soon melt like late rain-swept snows, and "leave not a wrack behind."

The next generation will be in complete touch with the forest idea, and even the old are learning, little by little, that forestry has come to stay, that timber cannot be cut without a permit, that grazing fees must be paid and that the forest officer is sustained, in case of need, by the whole power of a great government. No tactful man will ever try to "rub these things in;" but neither will he give up this impregnable position, as did one old-time ranger that I knew of. He was heard to say to a frontiersman, who objected to the trouble of asking for a permit for free firewood:

"If I wasn't a ranger I would feel just as you do. It's kind of a fool regulation anyhow."

Slowly and often painfully, then, the average frontiersman will learn the indisputable legal fact that what he has called "his" mountains belong in large part to all the people of America, "for the greatest good of the greatest number," and for whatever can be shown to be the "higher use." In what the frontiersman calls "his country," he only owns certain areas to which he has secured a title. He never had "rights" in the woods, the waters, the game, the grazing over wild areas of unentered land—the land of the people of the Nation. He only had a temporary privilege to use these outside lands, because they lay idle and unfenced. The Nation so long deemed itself so rich in surplus lands that no one thought of reducing these things to a business system, and of charging a rental for all use of Government land, so as to keep in clear sight the main fact of ownership. Men's thoughts are clearing fast on this point. In a National Forest the lands belong to the Government, and to those people who have titles there.

I find it slow work to get a frontiersman to understand or accept all this, and harder yet to have him realize that a "regulation" has any legal value whatever. Sometimes I say to a man:

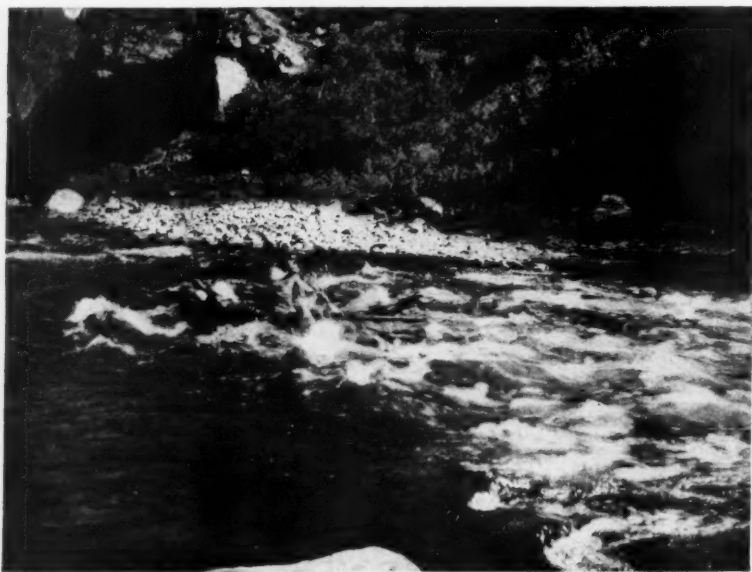
"It's this way: All the people in California own the statehouse at Sacramento, because they furnished the money and ordered it built. But the laws of California create a Capitol Commission, appointed by the governor, and empower this commission to appoint a superintendent, who hires the workmen, and makes rules which are posted all over the building. If you go up there and deface the building, or spit on the floor, the first of the officials who sees you will stop it. If you make a row, he will "run you in." If the people had not given the authority to make such rules and regulations (and to enforce them) pretty soon California would have no Capitol. In just the same way the people established the forest, and gave the chief of the forest power to make rules and regulations which have the force of law. Government is mainly carried on in all civilized countries by appointive officers. Most

of the business of life is carried on in that way, too. Directors consult, and name a bank cashier, or a mill-boss, or a division superintendent. They cannot possibly leave it to the vote of the depositors, or the mill-hands, or the railroad laborers. There is no other way, so far as we can see at present, than to have the forests of America run from year to year under a business system, which puts men at the head, holds them responsible, and gives their rules and regulations an authoritative force."

I hear some reader saying just here: "This is too simple: no one objects to the system." But I assure you that I have known many persons who had to be talked to in just this way about "rules and regulations." Where conditions are primitive, thinking, too, remains primitive, and I have found a lot of comparisons very useful. The people want a battleship, but appointive officers must plan, build, and operate it under "rules and regulations." What happens to a man who walks into a Government navy yard, and tries to carry off some lumber? Very much what happens to a fellow who goes into a Government forest and tries to get

what does not belong to him. And everybody knows that all this protection and this enforcement of "rules and regulations" is necessary.

I began these notes by saying that we warred continually with the spirits of doubt and chaos. But ever the empire of old Night diminishes; the light pours through. As in those tremendous cosmogonies of Dante and Milton, Hell, and all that is yet formless or sheer evil, lies below, shaken by great waves, winnowed by mighty winds, but nevertheless, already marked out for new worlds by the golden compasses of the Almighty. All that we need to see these things more clearly is to have more life, more vitality, more fighting power, a more absolute and invincible courage of our convictions. Then, though without diplomas, we shall teach the people, and though without batons, we shall lead them to victories of which they do not yet dream. Then we shall not be injured in mind, body or soul by any one's misinterpretations of us, or of our work. That work will move on as the stars of heaven move—a part of Universal Order.



Shooting the Rapids of the Grand Canyon of the Gunnison in a Canvas Boat

## ETHICS OF THE FOREST

By ALEXANDRE ERIXON

"By day or by night, summer or winter, beneath the trees the heart feels nearer to that depth of life which the far sky means. The rest of spirit, found only in beauty, ideal and pure, comes there because the distance seems within touch of thought."—*Jefferies*.

NATURE, with its spirit of serenity and gentle teachings, is truly perceived by only a few in the busy rush of our prosaic time; and yet, if we will only stop to consider, we shall find that the phase here presented is not the one of least value.

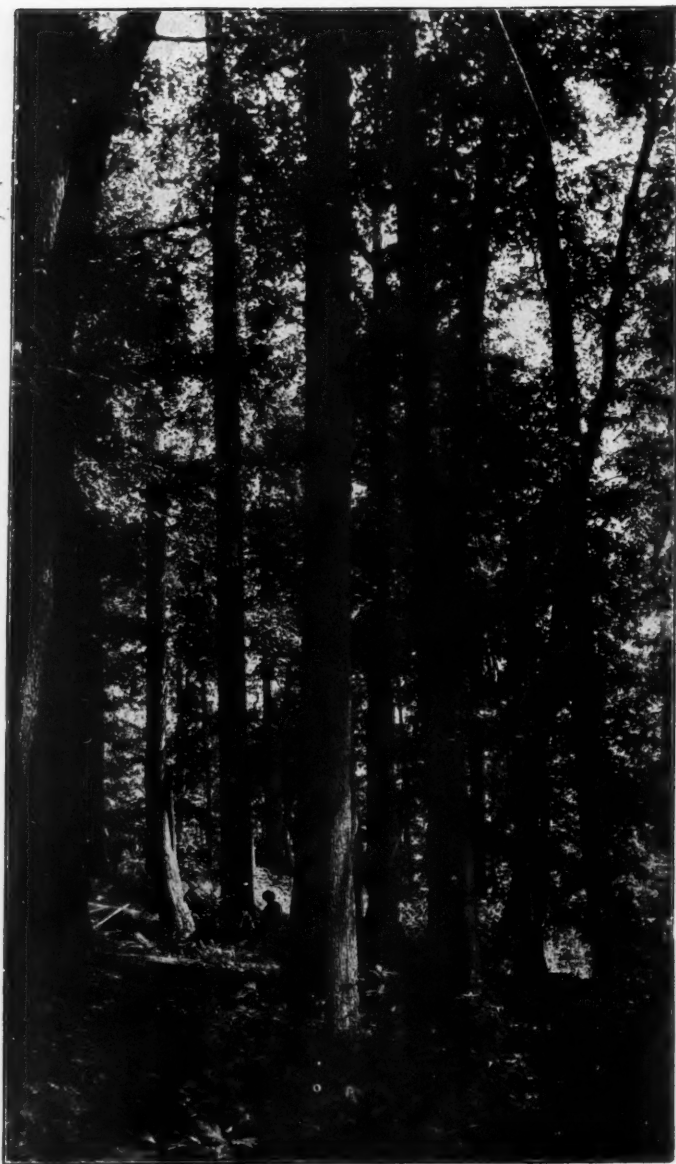
"To most of us," says Lubbock, "Nature when sombre, or even gloomy, is soothing and consoling; when bright and beautiful, not only raises the spirit, but inspires and elevates the whole being."

No wonder that in ancient times the raiment of the fields and hillsides became an object of reverence, and that the forests were held in religious worship. With a roof of leaves, a carpet of moss and flowers, the stillness, and the softened light of the shady arcades, what a realm we have for the fairies of old mythology! But though our age can see only as visions of the past, there are yet monarchs of the forest that become enveloped with their own chapters of historic events, which give them an added charm even to the less poetic observer. In our own country these landmarks may yet be few, but if not neglected they will go down into the annals of posterity like "The Soma Cypress of Lombardy, which is 120 feet high and twenty-three in circumference, and is calculated to go back forty years before the birth of Christ. Francis the First is said to have driven his sword into it in despair after the battle of Padua, and Napoleon altered his road over the Simplon so as to spare it." And though their history may not have so many

pages as that of this, even the trees under which we played as children will come back with reverent memories if we see them shading the same plot of grass, after many years.

But there are also pleasures and benefits which are ours to enjoy to-day; though often they are so common as to pass unheeded. The comfort of shade in the warmth of summer, beneath a canopy of leaves is one of the free gifts of the forest. Again, there is the shelter which it yields in a storm. And not least, the fresh fragrance of its purified air, where with each breath we gain a lengthened lease of life, and the mind is revived as well as the body. Lastly, in this class, we may also add that of wealth, following as a gift of the forest, of which Sir John Lubbock gives us an example when speaking of "The region of the Landes, which fifty years ago was one of the poorest and most miserable in France, but has now been made one of the most prosperous, owing to the planting of pines. The increased value is estimated at no less than 1,000,000,000 francs. Where there were fifty years ago only a few thousand poor and unhealthy shepherds whose flocks pastured on the scanty herbage, there are now sawmills, charcoal kilns and turpentine works, interspersed with thriving villages and fertile agricultural lands."

"Speak to the earth and it shall teach thee," says Job. And truly, to those who study Nature, it will also have its lesson. Of this Charles C. Abbott brings forth a very pretty illustration when speaking of a tree. "Go to it in



A Hardwood Forest, Showing Good Specimens of the Tulip Tree  
or Yellow Poplar (*Liriodendron Tulipifera*)





Scene along Indian River, Alaska, Showing Spruce Timber

early spring," says he, "and watch the swelling leaf-buds. This is the tree's busiest time, and yet how quietly it does its work! No one ever heard of a nervous or fretful tree. \* \* \* I know a beech that yearly bears a half-million of leaves, yet their growth never made sufficient stir to deflect a thistle-down from its course." To this he further adds, that, "He is a poor student who can spend a day with a tree and go home none the wiser."

All this may be perceived by a general observer if the mind is in tune with Nature; but still its greatest ethical value can be seen only when we open the portals of literature and art. The

indebtedness of the latter to Nature is self-evident, if we look into galleries and homes for the beautifying pictorial productions of the day; but of its relation to literature less is commonly known. However, it is a recognized fact that environments lend their modification to human character and work. Of this Ruskin speaks, with due force of expression, in the third volume of *Modern Painters*:

"This gift of taking pleasure in landscape I assuredly possess in a greater degree than most men; it having been the ruling passion of my life, and the reason for the choice of its field of labor."

All familiar with the works of Ruskin will affirm that his "field of labor" was one of the most noble of modern times. And we will here only add another quotation from his writings about the moral of landscapes. "It was," says he, referring to the inspiration of beautiful sceneries, "according to its strength, inconsistent with every evil feeling, with spite, anger, covetousness, discontent, and every other hateful passion; but would associate itself deeply with every just and noble sorrow, joy, or affection."

In the same chapter he speaks of the works produced by some of the eminent authors in whom love of nature formed one of the strong traits of character, giving the following words as a summary of the effects which this love produced: "And if we now take final and full view of the matter, we shall find that the love of nature, wherever it has existed, has been a faithful and sacred element of human feeling; \* \* \* it becomes the channel of certain sacred truths, which by no other means can be conveyed." On the other hand, as a matter of contrast, he brings forth some examples of the results attained where this love was lacking; proving there the existence of a pleasure which the writers themselves felt in mere "filth and pain." "They delight in dwelling upon vice, misfortune, or folly, as a subject of amusement."

Without seeking further data to verify this line of thought, let us here pass to the inferences deduced: that the effects which environments lend to one's work may be greater than at first believed; and secondly: that purity of environments will lead to purity of thought; for it is evident that there will be no love of nature if there is around us no nature to love. And as a summary of this analysis we will find that the decline of this love does not only bring devastated fields, but also a degen-

eracy of moral sentiment; not only the loss of material wealth, but also the germs of national degeneration.

"Beautiful things have an ideal to show us," says Harris. "When we get acquainted with them and, as it were, get their confidence, they tell us their secret." And in the beauty of Nature, the vegetable kingdom, where the trees of the forest rank as the summary of all creative perfection, this secret will be found to be in a happier and nobler trend of thought. With this their ancient sacredness becomes more rational. And we find, in our own time, not only the apparent advisability of sparing the old landmarks, but the necessity of increasing as far as possible these areas which bring their salutary influence to both body and mind. In addition to this rises the still graver need of not only encouraging the growth of a nature to love, but also the love of nature; the study of that which in itself is a source of peace and pleasure.

We must arrive at a true conception of beauty, and learn that in a final analysis the value of these verdant areas will there even transcend their economic worth; leading, as it does, not only to the highest development of the most notable talents with which human minds have been endowed, but also to a moral transcendency of the people among which the influence of these talents is brought to bear. And in this way, and this way only, can we leave to the future a country which is not composed of barren hillsides and barren hearts.

"All those who love Nature she loves in return, and will richly reward, not perhaps with good things, as they are commonly called, but with the best things of this world; not with money and titles, horses and carriages, but with bright and happy thoughts, contentment and peace of mind."





Natural Reproduction of White Pine. Showing Density of Growth



Logs on the Ice, Just before the Spring Freshet



## IN THE GIANT FOREST OF THE SIERRAS

By ALEXANDER BLAIR THAW

YE FIRST of living things!  
 Ye that were goodly trees  
 When the great King of Kings,  
 Building his garden wall,  
 Brought down to Babylon,  
 Upon her streams, the tall  
 Cedars of Lebanon.

Ye mighty trees!  
 Ye which are first, of all  
 Kings of the wildwood!

Over the earth and seas  
 Here we are come at last,  
 Weary with wanderings,  
 Down at your feet to fall;  
 Here, by your mountain springs,  
 Silent and all alone,  
 Through the long ages past,  
 High on your granite throne  
 Ye stood in your glory.

Mighty ye grew in girth,  
 Brother by brother,  
 Bending your mighty knees  
 Down to the lap of earth,  
 While the great mother  
 Still to your listening ears  
 Whispered her story,  
 Tales of our wandering years,  
 Tales of our childhood.

Here on the mother's lap,  
 When earth was young,  
 Your slender rootlets clung.  
 Like tender fingers pressed  
 Close to her maiden breast,  
 Then first the living sap  
 Leaped from her bosom.

Now you are mighty trees—  
 Full forty centuries  
 Past, since that morn,  
 When on these stony hills  
 Bloomed your first blossom.

Led by your mountain rills,  
 We greet you, great brothers, first born  
 Of our mother, the earth!  
 Here, in the heart of the hills,  
 Where you dwell  
 And forever have dwelt,  
 The great mother first felt  
 Through her virgin repose  
 The quickening spell  
 Of your birth.

And under the snows  
 Of these hills of her breasts,  
 Where they rise—  
 Where they lift their pure crests  
 To the skies—  
 Deep under the ground,  
 Where your strong roots are wound,  
 Her delicate veins  
 With your growth have grown;  
 And they swell  
 With the coming of life to these hills  
 Where you dwell,  
 With the sweep of the life-giving rains,  
 Which her passion distils  
 From the pure, sunlit heavens above her.

Ye guardians who treasure  
 The gracious gift of rain,  
 And still pour forth again,  
 Age after age, and year on year,  
 In bounteous measure,  
 Your everlasting fountains!  
 O, ye great trees,  
 Who lift your lofty forms,  
 And gather earth's increase,  
 And reign in endless peace  
 Through all the centuries  
 Amidst the passions of her storm!  
 Up to these mountains—  
 Where evermore you stand,  
 Great sentinels  
 O'er all this virgin land,  
 Guarding your sacred wells,  
 We come to drink of these.

# THE WORLD'S MOST VALUABLE IRRIGATED DISTRICTS

By G. E. BROWNE

AT THE present time, when the tendency for people to congregate in the cities is so great, and when these congested conditions result in such a loss to health and happiness and morals to so many, it seems a pity that the wonderful resources of the irrigated sections of our Great West can not be brought more closely to the attention of the public generally. There is room now for hundreds of thousands of our people in the irrigated districts already developed, and other great projects nearing completion. With the development of irrigation during the past few years, and at the cost of millions of dollars, agricultural, horticultural and intensified farming have advanced most wonderfully.

This is an age of specializing, and, thanks to our Federal Government, which through the Reclamation Service, the Forest Service, and the Bureau of Soils and Plant Industry, has brought these subjects down to a science, thousands of acres of arid and worthless lands are now occupied by the most prosperous and contented people on the continent. No other public appropriations our Government has made have resulted in so much good to so many.

In this age, when the young man asks, "What business am I to follow?" what better advice can be given him than to follow scientific agriculture and horticulture? He can make no mistake by taking up a tract of irrigated land, which has been proved to be adapted to fruit culture. It is an ideal life—not isolated, as on the prairies, farms and ranches, and our educated people are developing and mak-

ing their homes in these new districts, and the social features of this life are more congenial than in the large cities. Many of the leading educators and business men of the country are buying and developing irrigated lands in the better fruit sections. There are excellent school facilities and it is a healthy life, and a life of independence.

Fruit raising on irrigated land appeals to nearly every one. It is not drudging in the hot sun and dry and dusty soil for small and not sure yields of crops, but concentrated work confined to a small area. No one should be misled, however, and think a living can be obtained with little or no work. It requires the best attention and at the right time; but he who gives honest and intelligent attention to his work will be amply repaid in results. Most irrigation companies prefer young men, even though they have had no experience in country life and fruit culture. They generally learn the modern methods more correctly and in less time than the older farmers from the East, who are liable to be set in their methods. It is the intelligent and industrious class of people who have made the best districts so famous.

At the present time there are many irrigating companies putting land on the market, both in large and small tracts, some demanding high prices for the land and others much lower. The Government is also expending millions of dollars in new undertakings.

Irrigated lands are divided into two classes, one, which we may designate as fruit land, which, in the raw state, always brings a high price, and the other forage and crop land, which





The Assouan Dam in Course of Construction. Filling in the Excavations with Masonry

sells much lower. In this article I am dealing with the former. However, I want to say here, that the latter class is valuable land, and with proper care will yield large returns, but it has not the attractive features nor as great prospects as the former. It can never reach the high prices which the fruit lands begin to bring immediately after they are planted to trees.

I have shown no partiality in selecting the best fruit districts, but have taken Wenatchee, Hood River, Yakima and Spokane Valley as examples, for in these districts there are better organizations and better results have been attained. There are other localities which are smaller and probably fully as good, but the above mentioned districts are undoubtedly the best known throughout the country on account of their age, and because their fruit has gained a world-wide reputation. Fruit growers in these places are using the most advanced and improved methods, and land values are the highest in the West.

These four great districts have set the example, which the younger territories are bound to follow to achieve success. It has not been easy to gain the reputation that Wenatchee, Hood River, Yakima and Spokane Valley have in the markets of the world.

There are many different kinds of fruits raised in these places, but the apple is the leader. The culture of this fruit has reached the highest possible development, and that grown in these sections commands the top-notch prices in the world's market.

These districts were all started in a small way, and it is now almost impossible to buy raw land except in the Spokane Valley, where a few tracts are being put on the market.

Success or failure extends from the time the land is broken and trees planted, up to the bearing state, and everything depends on proper care at the proper time, especially in pruning, spraying, irrigating and cultivating.

Thanks again to the Government interest and advice on these subjects, the growth of the fruit industry has

been wonderfully developed, and the increased value of the land has gone beyond the wildest expectations, and is still advancing.

People look with amazement at the irrigated land values, and are just as much amazed at the prices obtained for fruit grown on these lands. The present prices and values are certain to keep on climbing as long as the fruit growers in these districts adhere to the high standards set in growing, packing and marketing their products.

The most essential requirement in making this arid land valuable is the water. The more complete and better regulated the water system, the more valuable it is to the land and the owner. Above all things the water supply must be adequate at all times.

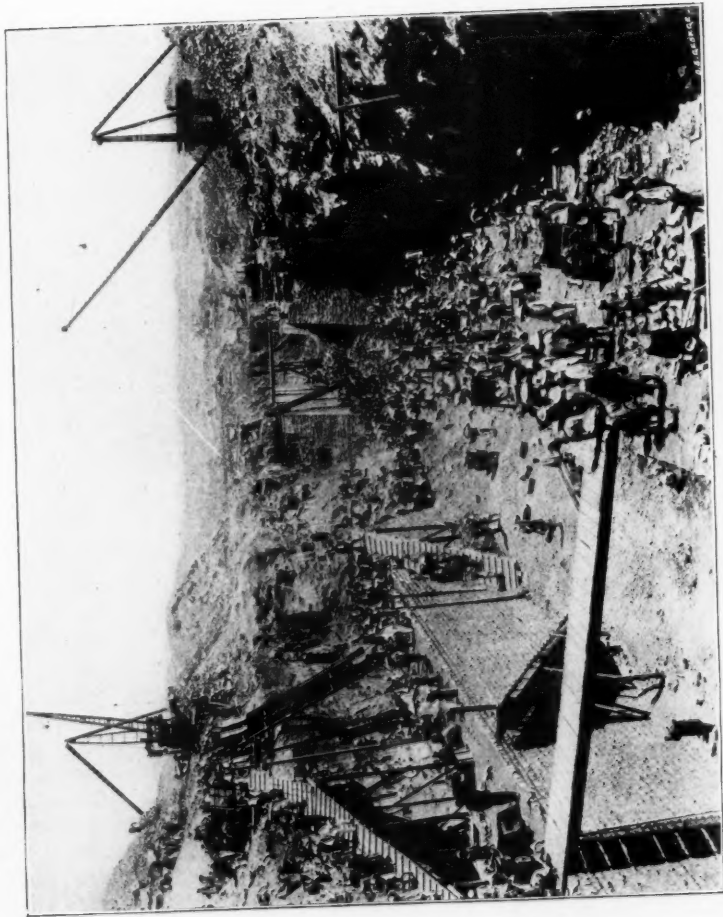
The right kind of trees, true to name and from the best nursery stock, adapted to the soil, climate and general conditions, is the next essential to success.

Transportation is undoubtedly as important as any one thing, excepting water and nursery stock. Cars must be had at the time needed, and the more railroad competition at hand the more valuable the land is.

Soils are also very essential. In the four districts above mentioned, there are entirely different soils, but each one is especially adapted to growing different varieties of apples, peaches, pears, cherries, plums, prunes, apricots and grapes, and consequently the above localities have never been forced to compete strongly among themselves.

Wenatchee grows Spitzenberg apples very successfully and an exceptionally fine quality of peaches, apricots and cherries. Hood River leads with the Yellow Newton and Spitzenberg apples. Yakima is proved to be better adapted to Winesap apples and certain varieties of peaches and pears. Spokane Valley grows to excellent advantage the Jonathan, Rome Beauty and Wagener apples.

The systematic picking, packing and marketing of the fruit leads to increased values for the products of the orchards, and this has caused the organization of



The Nile Reservoir Dam at Assouan. Building the Ship-canal. This View Gives an Excellent Idea of the Vast Amount of Hand Labor



Grazing Sheep. Black Mesa Forest Reserve. Showing Scattering of the Animals, in Spite of Which Over-grazing Has Taken Place



Destruction of Agricultural Lands along the Kansas River, Resulting from the Spring Floods of 1903

fruit growers' associations, which are not only a great benefit to people raising fruits, but also to the buyers, as there is no cutting of prices and no poor fruit shipped. Pruning, spraying and caring for the trees, and picking and packing the crops all tend to increased values. The fruit industry nearly equals the lumber industry in capital, and will likely lead in a few years.

When one thinks of a five-year-old orchard (which means it is just coming in to bearing) selling for \$300 per acre, it seems absurdly high, but by proper attention and cultivation, the land can easily be made to pay ten per cent. net, or better, annually on this valuation. Many sales have been made this past season in these districts, of bearing orchards at from \$1,500 to \$3,000 per acre.

Taking the figures of each district separately and collectively, with an average yield per acre in the average year, we find that a five-year-old orchard, which is just beginning to bear nicely at that age, will pay for itself in four years, if the same were bought for \$3,000 per acre. It is nearly impossible to buy an orchard after the trees are over three years old, and this is very plausible, for any owner is generally situated so he can keep his holding until it comes into full bearing, when he is made independent with even a ten-acre tract.

Each year sees the price of land planted with trees increase in value, and a conservative price for two- and three-year-old orchards is \$700 and \$1,000, respectively.

Of all the numerous varieties of fruit grown in these four irrigated valleys or districts, there is probably a greater cash return derived from growing peaches, cherries, berries, cantaloupes, tomatoes and other small fruits, but it requires far greater attention and care than does the raising of apples. The first named fruits must necessarily be picked, packed and shipped just before they ripen, and any delay is disastrous to the grower. Not so, however, with apples. These may be picked through

a period of several weeks and packed and marketed at any time during the winter, and this fruit I desire to treat of in particular.

I have been asked many times "what are the best varieties of apples to raise." My answer is that it depends entirely on the climate, soil and location.

The Spitzenberg, Jonathan, Winesap, Rome Beauty and Wagener have the highest market value and are always in demand in the large apple centers. There are many other varieties, which grow and bear equally well, and often bring a high price, but the above named varieties command on the average the highest figures. The Winter Banana, which is a new apple, so to speak, has brought a remarkable price the past two seasons. It is a very delicate fruit, however, and hard to ship. It probably has the best coloring and the most delicate tints of any apple grown, but the flavor is poor. It would not be advisable to plant a large orchard to this variety, as it is simply a fad at the present time. The finest trade demands a melting fruit—a texture that assimilates when eating.

It is a difficult matter to decide on the different varieties for planting, but the best advice I know of is to plant a strictly commercial orchard, with, of course, the possible exception of a few varieties for family use.

It is proper to add that people are becoming so interested in the fruit industry that the department of agriculture in several of the western states, as well as at Washington, are flooded with inquiries relative to location and to the fruit industry in general. I can state very positively that there is no question before the American people to-day that is attracting so much attention as irrigation, and especially as applied to fruit culture, and I can venture to say that within two years all the best fruit districts that are now irrigated will be set out to orchards, and this coming year will see a great rush of the best class of citizens to these valleys to obtain small tracts of this valuable land.

The fruit markets of the world are





An Irrigation Canal in the Rice-growing Region, near Jennings, La. (Photo reproduced through courtesy of Mr. S. L. Cary)

demanding western fruit. No section of the country can compete with the West for the highest grades. Eastern nurseries have even moved to this section of the country. Buyers from all sections of the land, and many from London and European points, visit these valleys to make their annual purchases, and it is figured that two-fifths of the apple crop of this year is being shipped abroad.

How great this increase will be in the future can only be estimated from past shipments, and the continually increasing demand for our fruit in the European markets. Many dealers in this country, who ordered from one to twenty cars of apples this season, have recently placed orders for additional cars and find that they have to go without or pay increased prices. There is no fruit in the world that excels the western apple, and the great class of American apple users demand the best, regardless of price. From the closest observation, even in view of the fact that there are many orchards coming into bearing, the demand has increased faster than the supply, and market values are naturally bound to increase. It can be stated positively that American markets can more than take care of the additional fruit raised each year, and the foreign demand, on the other hand, has been increasing more rapidly in the past three years than the home demand.

There has seldom been any business that offered such great and sure returns to the investor, and irrigation has been proven to be of great value and no experiment.

It is not generally known that the laws of the State of Washington prohibit the sale or giving away of wormy apples. The object of this is to keep the orchards free from disease and increase the yield and price.

Agricultural schools and colleges have made careful tests and studies of the soils within their respective states, and a new comer is protected in every possible way, if he takes time to investigate. The danger from pests is now

very slight, as they are taken in hand at the start and never allowed to spread or obtain a foothold. I do not want to give the impression here that there are no obstacles to overcome, but people who plant orchards, and are observing, and listen to advice from people who have made this subject a careful study, are bound to bring their orchards into a bearing state in excellent condition.

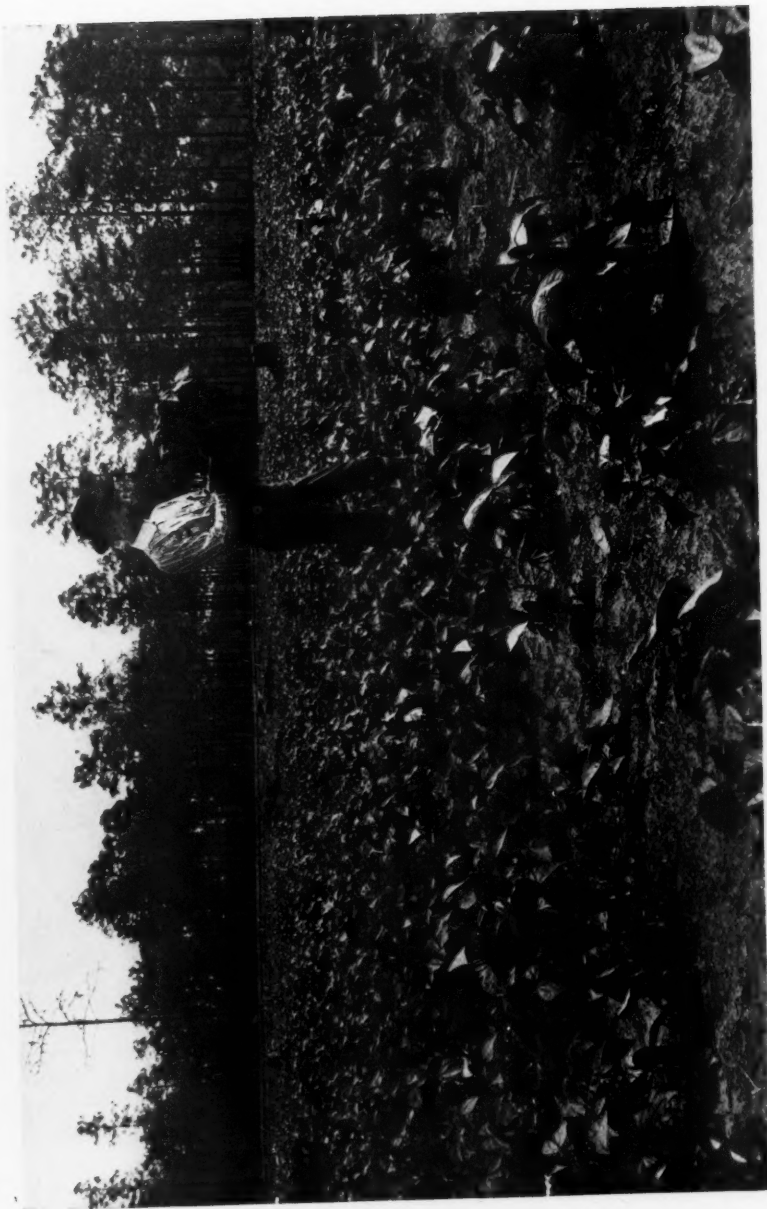
One thing very noticeable is, that people with little experience in irrigation and fruit culture often try to work out some plan of their own, which they think may be an improvement over methods used, but which proves in the end a detriment as long as they are trying to compete with men of experience and a thorough understanding of fruit culture. New comers should gain their experience from those who have been successful. Every fruit grower is interested in a beginner raising the best fruit and keeping his tract in excellent condition, as it prevents the spread of disease, and makes the land more valuable. There is as much danger of over irrigation as of too little. I know of one company that employs a "water man," who assists and teaches a new comer in the method of irrigation. It is most peculiar also that quite a large percentage of these same people seek this advice, but act on their own judgment, and very often injure the growth of their orchards.

I am sorry to say that there are a few poorly irrigated districts, due to the fact of location. Some are in frost belts, and others have not the soil or water which is essential. However, there are not many of this class, but a prospective purchaser should look into all conditions very thoroughly.

I have often heard the statement made that the crops between the trees will pay for the land in two years. There are a few examples of this being done, but only under the most favorable conditions. A ten-acre tract planted with vegetables or small produce between the trees, and well taken care of, can surely pay the interest on the investment and give the owner a good



Water Flowing Through the Upper Tier of Sluices, Down-stream Side  
(Photo reproduced through courtesy of Bureau of Soils, U. S. Dept. of Agriculture)



Field of Irrigated String-beans, Sanford, Fla.

living the year round. It is unreasonable to expect more. Often times in the desire to reap large returns in crops between the trees, the trees themselves are neglected. I would not advise cropping after the third year, unless it were for the purpose of a small family garden. Bearing fruit trees require all the nourishment the soil contains.

Other valleys may equal, or even surpass the districts above mentioned, but I am convinced that Wenatchee, Hood River, Yakima and Spokane Valley will always be in the front ranks, and when we think of the best apples grown, these places will naturally be called to

mind, and they will certainly make a decided claim for the honor of being the districts where the best and highest priced apples are raised.

Our National Government has aided very materially in reclaiming the arid lands of the West, and if our legislators at Washington could see the direct results of the appropriations that have been made in the past few years to the United States Geological Survey, and the Bureau of Soils of the Agricultural Department, they would certainly be very liberal in their appropriations to these departments the coming year and thereafter.



Surveying in the Grand Canyon



# FOREST PRESERVATION AND ELECTRIC DEVELOPMENT OF WATER POWER

By ALLEN HOLLIS

**A**N EMINENT North Country authority has declared that water was fit for but two uses—floating logs and turning mill wheels. Without assenting to this implied exclusion of the aesthetic notions of drinking and washing, we will now interest ourselves in the turning of mill wheels.

Our industrial development and economic welfare depend on heat, power, and light. Without these tangible expressions of energy, modern civilization were impossible. For centuries before the age of steam, power for mechanical uses was obtained from water; but heat and light have required fuel until the present era. The steam engine, operated from cheap coal, for a time lessened interest in water power; but increased cost of steam power, due to high cost of fuel and advanced wages, compels attention again to water power; and this finds a new field through electrical distribution.

Assuming that fuel will ultimately become exhausted (an hypothesis which bids fair to become an early reality), the only recognized substitute is water power. Sun power is still in the clouds—in more senses than one. Mechanical power from water is most conveniently applied through electricity; while heat and light can be obtained from water power solely through this agency. Our ultimate economic salvation seems inevitably to depend on water-generated electric energy.

Mr. Pinchot, the modern Moses who leads us back to the wilderness, sketches this picture of conditions now imminent:

"Let us suppose a man in a Western town, in a region without coal, rising on a cold morning, a few years hence,

when invention and enterprise have brought to pass the things which we can already foresee as coming in the application of electricity. He turns on the electric light made from water power; his breakfast is cooked on an electric stove heated by the power of the streams; his morning newspaper is printed on a press moved by electricity from the streams; he goes to his office in a trolley car moved by electricity from the same source. The desk upon which he writes his letters, the merchandise which he sells, the crops which he raises, will have been brought to him or will be taken from him in a freight car moved by electricity. His wife will run her sewing machine or her churn, and factories will turn their shafts and wheels by the same power."

Water power is the product of two factors, available head and supply of water. Roughly speaking, one cubic foot of water per second, falling ten feet, will produce one horse power; and in a year, ten hours a day, will do the work of five tons of coal or more, worth in this latitude twenty-five dollars. Operating twenty-four hours a day the same water power will equal twelve tons of coal, worth sixty dollars. Including labor and other costs, steam power, used ten hours a day, now costs over forty dollars per horse power under best conditions, and far more under usual conditions. As the price of fuel advances, the value of our unit of water power will correspondingly increase.

Electric energy can best be furnished from some general supply. The business is complicated and specialized, while the product can be used by the most inexperienced and careless. Apparatus for using electricity is well nigh fool proof.



View Showing the Clear Length of a Noble Fir

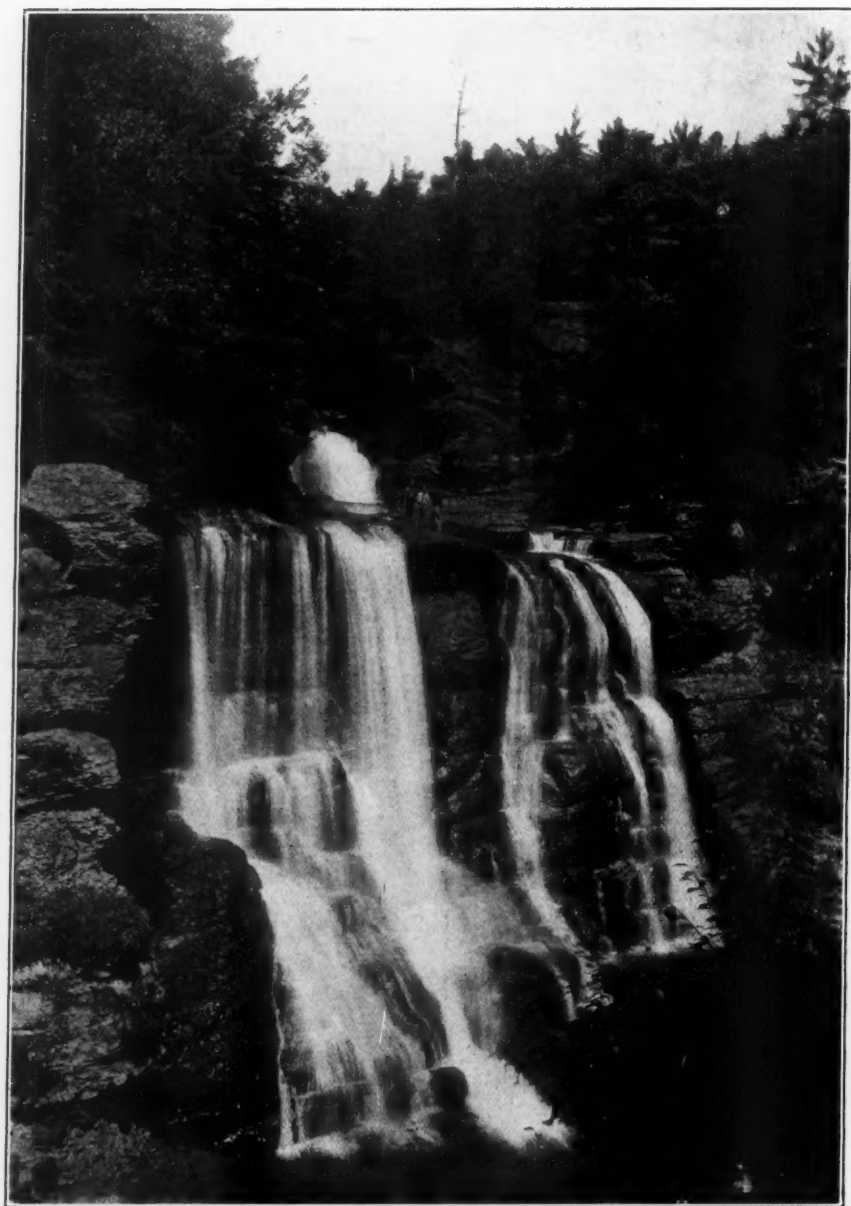
The demands on a central station, however, are most exacting. Service must be furnished every day and every hour. Factories must have a uniform supply. The demand of every customer must be met on the instant *without notice*. While a factory developing its own water power will adjust its business to bridge over low-water periods, the manufacturer who buys power forgets that such adjustments can be made.

These considerations bring us to a maxim in the electric supply business—the minimum capacity of the central station must equal the maximum demand of the service. No more regular business can be handled by a water power plant than can be supplied in times of lowest water. Unless auxiliary power is provided, the water wheel capacity is limited to this minimum flow; and the excess water above the minimum flow, amounting perhaps to eighty to ninety per cent. of the entire flow, is wasted.

The discrepancy between maximum and minimum stream flow is extraordinary. The Pemigewasset at Plymouth, representing a stream whose watershed is largely wooded, in a period of ten years showed a maximum flow of over 30,000 cubic feet per second (July, 1897); and a minimum of 120 cubic feet per second (September, 1899). There is no artificial storage on this stream. The minimum has fallen to 350 cubic feet per second every year for twenty years.

It is obvious then that any means by which the minimum flow can be preserved or increased is of vast importance to the water-driven electric plant.

If the minimum flow is sufficient to furnish adequate power, the rates to consumers can be fixed at the lowest point. Whenever an auxiliary becomes necessary, even for use only a few days in the year, charges must be advanced to carry this additional investment. Interest and fixed charges are at least ten per cent. on the investment, an annual charge of \$10 to \$15 per horsepower.



The Sawkill Falls, near Milford, Pa. One of the Many Beautiful Views in the Vicinity of the Yale Summer School of Forestry

These conditions have been met in our state by two methods, artificial storage in ponds and auxiliary steam stations. Probably every lake in New Hampshire is controlled by a dam, which retains the excess water for use in dry times. Little more can be done in this direction, because of damage to shore property by flowage; but the possibilities of artificial reservoirs are large, and are yet little employed in this state.

It has been found economical in manufacturing plants to develop water powers to an extent which demands the use of steam auxiliaries during nine months in the year; but as the price of coal advances the operation of steam relays will become more and more costly. The inevitable exhaustion of fuel supplies will compel attention to storage reservoirs, natural and artificial. The wisest plan is to conserve our fuel by the immediate use of available water powers to the utmost, employing them in connection with artificial power in such proportions as will give us the largest supply of useful water power. Any such plan necessarily involves distribution by electricity.

While the matter of minimum flow is of most consequence, the correlative conditions of increased freshets and erosion of soil are troublesome. The former involves heavier expense in building dams and protective walls, while the latter requires the removal of sediment from mill ponds and from supply and discharge channels. A water plant in Concord has had its flumes one-half filled with silt in two years.

What has forest preservation to do with all this?

There are probably few interested persons who have not seen the summer flow of some small stream destroyed by removing the forest growth from its source. Trees, especially evergreens, provide a spongy soil for retaining moisture and dense shade for retarding evaporation of water and melting of snow and ice. We know that forest preservation tends to equalize the stream flow.

It is fortunate that forestry methods which will produce the best financial returns from timberlands are most effective in maintaining the water supply.

These suggestions apply with special significance to our own state and particularly to the White Mountain region, in which rise the Connecticut, the Merrimack, the Androscoggin and the Saco. Upon these streams and their tributaries are water powers capable of developing thousands of horse power now running to waste. Many of these are small, but to these the protection of the woodlands is of more relative importance than to the larger. Small powers can be used by those of comparatively slender resources, who would be financially unable to develop artificial storage basins in distant places; while the larger streams in most cases, particularly the Merrimack, are already provided with such facilities. The larger unused powers are principally located at a distance from centers of populations needing a supply of electricity; but \$1,000 will build a mile of transmission line, which may be run hundreds of miles without prohibitive loss of energy.

The fact that these idle powers have remained unused, or if ever developed have been abandoned, indicates in most cases that they are not adapted or needed for manufacturing in that particular locality. This suggests at once the idea of transmitting the power to places where it may be needed—a miracle which can be performed only through the aid of electricity.

Instead of building cities in remote locations where the idle water powers are located, we will carry the power to our existing cities and towns which are now paying heavy tribute to the "barons" who own the coal fields and railroads.

So we find in this most practical subject an additional reason for urging forward a work the ultimate success of which depends upon securing the cooperation of every interest affected by forest destruction. I may safely promise some assistance to this end from the electric companies of New England.

## THE CONSERVATION OF WORLD RESOURCES

To Be Discussed at The Hague by Representatives of the Leading Nations Next September—The Significance of Such a Conference, the Need for It, and Some of the Subjects with which It Will Probably Deal.

By TREADWELL CLEVELAND, Jr.

THE North American Conference on the Conservation of Natural Resources, which held its sessions in Washington, February 18 to 22, was remarkable principally for two results—the powerful stimulus which it gave to the conservation movement in the North American continent, and the significant and unexpected expansion of the movement to worldwide proportions. The delegates to the conference from Canada and Mexico entered heartily into the spirit of international co-operation, which was the direct object of the conference. They pledged the aid of their respective countries, concurring in the belief that all of the countries should profit by the results obtained by any one of them, and that certain problems could be most satisfactorily solved by united action. On the second day of the conference, the delegates of all three countries unanimously endorsed by resolution the proposal advanced by the President and defined in a statement by the Secretary of State, that there be held at The Hague, next September, a conference on the world resources and their conservation, to which the forty-five nations which participated in the last Peace Conference would be invited to send representatives. The proposal was incorporated in the Declaration of Principles signed by the Commissioners.

Those who heard the President's address of welcome realized that Mr.

Roosevelt had struck a new note. His few words, carefully weighed and deliberately spoken, were pregnant with a political philosophy to which the nations are but now awakening, the philosophy that, broadly speaking, the nations must rise or fall together, and that therefore the highest aim of diplomacy is to secure not the conquest of rival powers, but the uplifting and development of neighbors bound together by common aims.

"The ablest man," said the President, "will do best where his neighbors also do well. It is just so with nations.

\* \* \* In international relations the great feature of the growth of the last century has been the gradual recognition of the fact that instead of its being normally the interest of one nation to see another depressed, it is normally the interest of each nation to see the others elevated. \* \* \* This conference represents one of the many steps that have been taken in recent years looking toward a harmonious cooperation between the nations of the earth for the common advancement of all.

\* \* \* I believe that the movement that you this day initiate is one of the utmost importance to this hemisphere and may become of the utmost importance to the world at large."

The President then pointed out some of the advantages which the North American countries would gain in com-



mon by the study of the problems of conservation, suggested lines of investigation that could best be pursued in union, and cited international streams as an example of natural resources whose injury or wise use concerned the neighboring countries equally.

In the general session of the conference, which immediately ensued in the Diplomatic Room of the Department of State, the delegates again emphasized the fact that each of the three countries must inevitably profit by the work of the others in dealing with conservation problems. The wide scope of these problems was once more indicated, particularly by Mr. Sydney Fisher, Canadian Minister of Agriculture, who said that Canada hoped to see the conservation movement extended "not only to all North America but to all the civilized nations of the earth."

When, therefore, later in the same day, the proposal to call a general conference at The Hague was broached to the delegates, it found them fully prepared to endorse it. At the same time, the primary object of the North American Conference was kept clearly in view. It was the sense of the conference that the peculiarly close interrelationship of conservation problems in North America required that the integrity of the conference be preserved. Discussion brought out a remarkable unanimity as to general policies, and it was felt that practical results of great value to each of the three countries would be secured by a plan of permanent cooperation. The delegates accordingly set themselves to review the condition of the resources of our northern continent and to compare methods and results in their utilization, with a view to drawing up a general declaration of principles which should embody a policy of conservation to be followed by the three countries represented. This declaration, the direct, tangible fruit of the conference, was published in the March issue of this magazine, following the report of the proceedings.

The State Department, by means of an aide-memoire addressed early in the present year to the foreign governments which are to be invited to send representatives to The Hague Conference, has already received favorable replies. There is thus assured a full attendance from the leading nations, who for the first time in history will meet to take stock of the material wealth of the whole earth and to discuss the means of so using that wealth as to safeguard the material future of the race. The plan is colossal. It is charged with tremendous possibilities, moral and economic, of which only partial glimpses can be caught in advance. That it will go far to knit new bonds of interdependence and mutual understanding between the nations, and so aid in the maintenance of peace, is beyond reasonable doubt. It cannot fail to cement the nations closer than ever before through a fuller realization of their dependence upon a common basis of prosperity, the common heritage of the human race in the natural resources of the earth. The Hague Conference will throw into new relief a long obscured truth—that the debt to Nature makes the whole world kin.

What will be the matters taken up in this spirit at The Hague, and what practical results may be expected to follow the conference?

#### PROBLEMS FOR THE HAGUE CONFERENCE

##### 1. *An Inventory of Resources.*

As the Secretary of State has already indicated in his statement concerning the North American Conference (p. 163), The Hague Conference "might well consider a general plan for an inventory of the natural resources of the world, and devising a uniform scheme for the expression of the results of such inventory, to the end that there may be a general understanding and appreciation of the world's supply of the material elements which underlie the development of civilization and the welfare of the peoples of the earth."

The great need of such a world inventory of resources is well illustrated

in the case of the forests. It is known, for example, that all Europe, as a unit, is an importer and not an exporter of timber, and that she is consequently making steady inroads upon the world's forest surplus; but it is not known what the world surplus of forest is. In other words, the nations face a future timber shortage, but do not know how soon it will come, and are therefore in the dark as to the action which is called for now to husband the present supply and provide for its renewal. The problem is fundamentally one of how much. Yet there are a number of countries of which the timber supplies and forest areas are practically unknown. In Canada, for example, the most widely differing estimates have been made of the forest resources; of the real character and extent of the Central and South American forests only fragmentary information exists; we do not accurately know at what rate the cut-over forests in the wood-exporting countries are restocking, while the various censuses which have been taken of our own remaining virgin forests do not agree. These facts only partially indicate our ignorance of the world situation in regard to forests products.

But not only are we ignorant as to the extent and value of existing forests and of their ability to bear the drains that are made upon them. We are handicapped in our calculations regarding the forests of foreign countries by the want of standardized statistical methods and interchangeable denominations. Thus, not only do we know very little of what we need to know of this great resource, but we are needlessly hampered in making use of what is known.

What is true of the forests is largely true of the other resources.

## 2. Recommendations.

Once more to quote the Secretary of State: "It would be appropriate also for the conference to consider the general phases of the correlated problems of checking and, when possible, repairing the injuries caused by the waste and

destruction of natural resources and utilities, and make recommendations in the interest of their conservation, development, and replenishment."

A number of the older countries are rich in experience by which newer countries may well profit. Of all nations, Japan alone entered the modern industrial age with her forests improved, and not depleted, by centuries of use. The same nation has taken an advanced stand on the subject of land classification. In 1898 she appropriated some \$13,000,000 for the classification of the land in the government forests alone. China, the "horrible example" among the nations in misuse of forest resources, has her lesson of warning to offer, to which she herself has now grown sensitive. Western Europe has many examples to show of both wise and wasteful development of resources. British India possesses an effective modern forest organization which holds many suggestions for our own country. Great Britain is at the moment considering the largest single afforestation project ever attempted, and her conditions of soil and climate are such that the experience of her European neighbors is a fair standard by which to predict the results which she may hope to secure.

With the lands, waters, and minerals the story is the same. Australia and New Zealand may have important lessons for us in their experience with their systems of land tenure. Most of Europe can teach us much in the intensive culture of soils. Switzerland, which has just amended her constitution so as to give the Federation supervision of the development of water power, occupies in respect to water resources a position in many ways not unlike our own. Few countries are so wasteful of the minerals in mining as is the United States, while in the safeguards which surround human life and health in the mines, in the factories, and in every day life, such nations as Germany can point to results which we have not begun to approach.

Such are but a few of the benefits which would accrue to the United States from a mastery of the lessons which the whole earth has to teach in the use of natural resources and the protection of life. And we should not be the sole gainers. We should be in a position to offer many useful suggestions and to furnish certain clear warnings from our own experience. Moreover, owing to the great extent and varied character of our resources the consumers of the whole world are interested in our commercial development, which is limited by the use that is made of our raw materials and our sources of power, while, conversely, our purchasing power in foreign markets will rise and fall with the national prosperity.

These and similar considerations apply also as between any one of the foreign nations and the rest. No single nation can afford to remain in ignorance of the experience of the others in the production of wealth from the riches of the land, and none, even if bent solely upon its own advantage, can reasonably or safely withhold from the rest the useful knowledge that it has.

There is every reason, therefore, why the combined wisdom of the nations in the economics of resources should be brought together, at The Hague, funded, formulated, and distributed for the good of all. The resulting recommendations may well lead to vast economies and perhaps even vaster developments in the future use of world resources. The treasures of the earth are a common store whose needless depletion works injury to all, and whose fullest use must augment the power and efficiency of the whole race.

### 3. *Economy of Effort and Outlay.*

In so large a field as the conservation of natural resources there is great risk of duplication of work. This risk could be removed by the action of The Hague Conference, to whose attention would be brought both the results already secured and the work under way in the several countries.

### 4. *Localization of Study.*

It is more than probable that certain classes of conservation problems can be studied best in one or two countries, even when their solution affects many or all countries. A better localization of study, which is closely allied to the prevention or duplication of effort, might well be a subject of discussion. In connection with subjects 3 and 4 there is indicated the possibility of cooperative agreements for the investigation, for common benefit, of problems in which several nations are equally interested.

### 5. *Compilation and Publication of Results.*

The results of investigations would be valuable in proportion as they would be accessible and uniformly expressed. One of the greatest services which The Hague Conference could perform would be to provide for a more satisfactory compilation and comparison of results and for their publication in easily available form, preferably in one language—French, for example, which is so admirably adapted for scientific exposition and is read by investigators in all countries.

### 6. *A Permanent International Bureau.*

All of the subjects above discussed, except the first and second, point to the need of a permanent international conservation bureau, without which it seems doubtful whether the legitimate objects of the conference could be fully secured. The International Bureau of Forest Experiment Stations is an example of such a bureau. This bureau has more than justified its existence, yet the problems with which it deals are far more closely related and more limited in scope than those embraced in the entire field of conservation. The considerations which led to its formation should weigh yet more decidedly in favor of a similar bureau charged with the collection and distribution of material dealing with the extent, condition, and use of the natural resources of the earth as a whole.

## A WORD FROM MRS. WILLIAMS

MRS. LYDIA ADAMS-WILLIAMS, the writer and lecturer on conservation, and the first woman to take up this work, says:

"From time immemorial when any great work is to be accomplished—any achievement which vitally concerns the life and welfare of humanity, any uplift of the children of men in the home or in the broader field, the world—to woman's integrity, resourcefulness, genius, and capacity for endurance has the final triumph been due.

"To Isabella of Spain, to her intuitive grasp of a great idea, to her foresight and her divine sympathy the world is indebted for the discovery of a great continent, for the civilization we enjoy to-day and for the great wealth of resources, the development of which has made us the most powerful nation on the face of the earth.

"As it was the *intuitive foresight* of a *woman* which brought the light of civilization to a great continent, so, in large measure, will it fall to woman, in her power to educate public sentiment, to save from complete exhaustion the natural resources upon which depend the welfare of the home, the children and the children's children.

"Unless immediate, concerted and determined action be taken by the women, the forests will be gone and the water power with them; the mothers and housewives of the next generation who will have to depend upon electricity generated by water power for heating

and lighting their homes, for cooking food and for other domestic purposes, as well as for transportation, will face a scarcity of natural resources and a monopoly of what remains which will threaten the comfort, the life, the very existence, even, of those they love and care for.

"Let all women throughout the country who have at heart the interest of the child and the economic welfare of the home and the homes that will be made by their children, immediately, before it is too late, use their utmost efforts to save the forests and to conserve the natural resources.

"Far-reaching results may be accomplished speedily by women educating the men of their families to work for conservation and to support those who favor it. Then by inculcating in their children the precepts of economy in relation to natural resources, and by impressing them with the unselfish aim and the patriotic duty of elevating the Nation to the highest plane of civilization, the motherhood of the country, in a single generation, may change the entire sentiment of the Nation, and convert this people from the most wasteful and extravagant in the world to the most prudent and conservative."

In our news columns may be found an interesting correspondence between Mrs. Williams and Mrs. Fairbanks, regarding the work of the Woman's National Rivers and Harbors Congress.



## THE "DISMAL SCIENCE" DECADENT

By THOMAS ELMER WILL

IN HIS address at the annual meeting, Rev. Edward Everett Hale spoke of having, as a boy, studied Jean-Baptiste Say's Political Economy, "which was a science comparatively new then. It was called the 'dismal science,' and with very good reason, for the political economy of those days was founded on the Devil's philosophy, which is 'the Devil take the hindmost and everybody cut throats for himself.'"

One of the infallible dogmas of the "dismal science" was the doctrine of *laissez faire*. It rested on the assumption that the existing economic status, including private property in practically all land and tools, and the uncontrolled conduct of industry by private individuals for private profit, was divinely decreed, fixed and eternal; that the operations of such an economic system were regulated by "natural laws" as irrevocable as the laws which govern the motions of the planets, and that the outcome was a system of "economic harmonies" beautiful to contemplate and, like the Ark of the Covenant, sacredly to be guarded against the profane touch of man or government.

Archbishop Whately (quoted in Francis Bowen's Principles of Political Economy, 1863, pages 20-22) illustrates the automatic workings of this system in the feeding of a city like London. After explaining the perfection of the mechanism, he exclaims: "It is really wonderful to consider with what ease and regularity this important end is accomplished, day after day, and year after year, through the sagacity and vigilance of private interests operating on the numerous class of wholesale, and more especially retail, dealers. Each of these watches attentively the demands of his neighborhood, or of the market he frequents, for

such commodities as he deals in. The apprehension, on the one hand, of not realizing all the profit he might, and on the other, of having his goods left on his hands,—these antagonist muscles regulate the extent of his dealings and the prices at which he buys and sells. An abundant supply causes him to lower his prices, and thus enables the public to enjoy that abundance; while he is guided only by the apprehension of being undersold. On the other hand, an actual or apprehended scarcity causes him to demand a higher price or to keep back his goods in expectation of a rise. Thus he cooperates, unknowingly, in conducting a system which no human wisdom directed to that end could have conducted so well,—the system by which this enormous population is fed from day to day.

"I say, 'no human wisdom'; for *wisdom* there surely is, in this adaptation of the means to the result actually produced. In this instance, there are the same marks of benevolent design which we are accustomed to admire in the anatomical structure of the human body. \* \* \* The heavens do indeed 'declare the glory of God,' and the human body is fearfully and wonderfully made; but man, considered not merely as an organized being, but as a rational agent and as a member of society, is perhaps the most wonderfully contrived product of Divine wisdom that we have any knowledge of."

On this, Professor Bowen comments:

"It is on a large induction from such cases as this, that political economists rest their most comprehensive and most noted maxim—the *laissez-faire*, or 'let-alone' principle—the doctrine of non-interference by the government with the economical interests of society.



True, these interests are in the hands of individuals, who look only to their own immediate profit, and not to the public advantage, or to the distant future. They are not only selfish; they are often ignorant, short-sighted and unconscious of much of the work that they do. But society is a complex and delicate machine, the real Author and Governor of which is Divine. Men are often His agents, who do His work, and know it not. He turneth their selfishness to good; and ends which could not be accomplished by the greatest sagacity, the most enlightened and disinterested public spirit, and the most strenuous exertions of human legislators and governors, are effected directly and incessantly, even through the ignorance, the wilfulness and the avarice of men. Man cannot interfere with His work without marring it.

\* \* \* *Laissez-faire*; 'these things regulate themselves,' in common phrase; which means, of course, that God regulates them by His general laws, which always, in the long run, work to good. In these modern days, the ruler or governor who is most to be dreaded is, not the tyrant, but the busybody. Let the course of trade and the condition of society alone, is the best advice which can be given to the legislator, the projector and the reformer. Busy yourselves, if you must be busy, with *individual cases* of wrong, hardship, or suffering; but do not meddle with the general laws of the universe."

In the same vein, Say (Political Economy, page 88) says:

"The grand mischiefs of authoritative interference proceed not from occasional exceptions to established maxims, but from false ideas of the nature of things, and the false maxims built upon them. It is then that mischief is done by wholesale, and evil pursued upon system."

This, of course, is the doctrine on which Mr. Herbert Spencer earnestly insisted from the days of his Social Statics, in 1850, until his death. In the book named, for example, (page 334) we find him saying: "Political economy has shown us in this matter—what, indeed, it is its chief mission to

show—that our wisest plan is to let things take their own course;" and, in his *The Study of Sociology* (page 21) he says: "The one thing needful is to maintain the conditions under which the natural actions have fair play."

Some of the saner writers, it is true, as John Stuart Mill, in Chap. XI. of his *Political Economy*, where he discusses "the grounds and limits of the *laissez-faire*, or non-interference principle," recognize the possibility of extending that principle much too far. Mill satisfied himself with maintaining that "*laissez-faire* is the general rule, but is liable to large exceptions." (Page 573.)

The striking politico-scientific and economic fact to-day is the number of exceptions which every advanced nation is finding. It is true, Mr. Spencer listed many of these, pilloried them as horrible examples, and pointed to them as evidences of "The coming slavery," "The sins of legislators," "The new Toryism" and "The great political superstition;" but society marches straight on and, long before his death, the great English philosopher was recognized as, sociologically, a "voice crying in the wilderness."

Speaking of Say's "Devil's philosophy," Doctor Hale says, "We have now gotten well beyond that." A striking example of the distance which we have actually gotten beyond it is found in the article by Mr. John Martin in "*The World's Work*" for September last, entitled "Our Government's Widespread Socialistic Activities." The editors explain that "Mr. Martin uses the word socialism in its broad sense to denote a wide range of activities beyond those that pertain to the individual." He begins with the statement that, "Democracy in this country has acted socialistically and communistically to a degree which few Americans realize." He then discusses "socialism for the farmer," "in reclamation work," "in the swamps," "in the forest," "in our colonies," "in the canal zone," "in the consular service," "in public utilities," and "in National legislation," and approaches his close with the following paragraph:



"So far are theory and action divorced, that we can picture a city alderman lauding private enterprise as the source of American greatness, and denouncing collective enterprise as impossible. And yet, he walks down a city street, which the city sweepers are cleaning and the city repairers improving, to the city subway by which he reaches his office in the City Hall. There he washes his hands in city water and runs the waste into a city sewer. He turns on the city electric light, and reads the mail which National departments have brought him from the ends of the earth. He glows with pride as he reads how gallantly his National army has subdued some Indians, and how cleverly his National navy has rounded Cape Horn. From his city newspaper, the *City Record*, he discovers that a meeting held the night before has decided to interfere socially with the outrageous capitalist management of the street cars. Before long, perhaps, his children come in from the city school, where they have had a school meal at cost price, to tell him that they are going to play that afternoon in the city playgrounds, and that his wife wishes him to call her up on the co-operative telephone to set an hour for their walk in the city park before taking the city ferry to the city swimming baths. They all want him to take them later to hear the city band, though the lads would prefer to put in an hour or two at the city gymnasium, and the girls at the city library," etc.

That Mr. Martin's closing pungent paragraphs are adapted from a similar statement made by Mr. Sidney Webb, some fifteen years ago, regarding British conditions, does not rob them of their interest and appositeness. The fact is that, while the civilized world is by no means ready to repudiate, *in toto*, the principle of private ownership of productive agencies, and reasonable freedom of individual initiative, it has long since made up its mind that the sacred principle of *laissez-faire* is more honored in the breach than in the observance; and that the constant study of the legislator must be to see that the strong, in pursuing their per-

sonal ends, do not trample the weak into the mire, and that private concerns and interests do not menace the public interests.

In his special message transmitting the report of the National Conservation Commission, President Roosevelt voices fundamental truths too easily lost sight of in the struggle for money. He says: "The function of our government is to ensure to all its citizens, now and hereafter, their rights to life, liberty, and the pursuit of happiness.

\* \* \* We should do all in our power to develop and protect individual liberty, individual initiative, but subject always to the need of preserving and promoting the general good. When necessary, the private right must yield, under due process of law and with proper compensation, to the welfare of the commonwealth \* \* \* no man and no set of men should be allowed to play the game of competition with loaded dice. The unchecked existence of monopoly is incompatible with equality of opportunity. The reason for the exercise of government control over great monopolies is to equalize opportunity." The President names many of the policies mentioned by Mr. Martin: those relating to public lands, forests, reclamation, pure food, Panama Canal, holding the remaining supply of unappropriated coal, conserving resources, bettering of country life, improving waterways, protecting children from excessive toil and ensuring them educational opportunities, and the like; and declares that all these acts "fit in as parts of a consistent whole;" that they "are integral parts of the same attempt, the attempt to enthrone justice and righteousness, to secure freedom of opportunity to all of our citizens, now and hereafter, and to set the ultimate interest of all of us above the temporary interest of any individual, class or group."

These principles are unquestionably sound, and the science of economics or politics, however ancient or "classic," which cannot be made to square with them, must give place to one which will.

# CHESTNUT TIMBER GOING TO WASTE

By ROBERT T. MORRIS

IN THE vicinity of New York a very large amount of valuable chestnut timber is now going to waste, and it seems to me that it would be worth the while of some lumbering concern to take charge of the situation. The chestnut blight, which has rapidly made its way from the South, reached this locality in serious form about three years ago. Practically the entire chestnut stand of Long Island is going under, and the magnitude of the loss does not seem to be comprehended. North of New York City, in Westchester County, and Connecticut, the blight was noticed as a menace two years ago. At that time eight or ten trees on my country place presented blight signs, and this last autumn many hundred trees were affected on my grounds. The chestnut forest in the vicinity of New York must be very valuable for somebody, although the area is so heavily timbered that there is little shortage of hardwoods. Consequently it is almost impossible to dispose of timber to local dealers excepting solid tracts, to be cut clean of all timber. Lumbermen accustomed to large operations do not realize that the deserted farms of New England have reverted to forest, and that there are wild deer within seventeen miles of New York City limits on two sides. Millions of feet of fine chestnut timber,

valuable for planking, piles, telegraph poles, and cord wood, will be lost within the next two years. Right now the blighted trees are still good for cutting purposes. I tried to dispose of about 1,000 chestnut trees, but could not find a purchaser. All of my neighbors are in the same predicament. "No market," is the regular reply to all of my letters asking dealers if they want hardwood of any sort. Forty or fifty cords of hardwood were rotting on the ground last autumn because I could not find any one who wanted cord wood that had been split and stacked while clearing part of the property three years ago. I gave away twenty cords recently, but could not find any one who would haul the wood "on halves," leaving one cord at my woodpile for every cord that he would take for himself.

It is a pity now to see the magnificent chestnut forest going to ruin with blight, because there is so little market near New York for chestnut timber and lumber. There are plenty of fine, straight trees thirty or forty feet to the first limb, and measuring from two to three feet or more in diameter. These are to be lost so quickly that they will be gone before lumbermen realize that profits might be made by operating over a territory reaching in a circle of say fifty miles about this city, and shipping the products to regions where there is really a shortage of timber.



# ARTICLES OF INCORPORATION AND BY-LAWS OF THE AMERICAN FORESTRY ASSOCIATION

## ARTICLES OF INCORPORATION

WHEREAS, at a meeting of the American Forestry Association (a voluntary association organized in the city of Cincinnati and state of Ohio in 1882), duly called and held on the 20th day of December, A. D. 1892, it was

*Resolved*, That the resident members of the Executive Committee of this Association in the city of Washington, District of Columbia, be, and hereby are, constituted a committee with full power to take all action which they may consider necessary to become a body corporate under and by virtue of the acts of Congress relating to the District of Columbia in such case made and provided:

*Now, therefore*, by virtue of and in pursuance with the foregoing resolution and the action of said Committee, duly had in that behalf:

*Know all men by these presents*, That we, the undersigned, each of whom is over twenty-one years of age and a citizen of the United States, and a majority of whom are citizens of the District of Columbia, being desirous of associating ourselves and those associated with us as aforesaid, for the purpose of converting the American Forestry Association into a body corporate in accordance with the acts of Congress relating to the District of Columbia, in such cases made and provided, do hereby certify as follows:

First. The name or title by which this corporation shall be known in law shall be "The American Forestry Association."

Second. That the term for which it is organized is twenty (20) years.

Third. That the objects of the organization are the discussion of subjects relating to tree-planting, the conservation, management, and renewal of forests, and the cli-

matic and other influences that affect their welfare; the collection of forest statistics, and the advancement of educational, legislative, or other measures tending to the promotion of these objects. It shall especially endeavor to centralize the work done and diffuse the knowledge gained.

Fourth. That the number of Directors of this organization for the first year shall be seven.

IN TESTIMONY WHEREOF, we have severally set our hands and seals this 25th day of January, 1897.

(Seal) EDWARD A. BOWERS,  
(Seal) GARDINER G. HUBBARD,  
(Seal) JOS. C. HORNBLOWER,  
(Seal) BERNARD E. FERNOW,  
(Seal) NATHL. WILSON,  
(Seal) GEO. P. WHITTLESEY,  
(Seal) SAM. MADDOX.

*District of Columbia, ss:*

I, Frank D. Blackistone, a Notary Public in and for the District of Columbia, do hereby certify that on this 25th day of January, A. D. 1897, before me personally appeared Edward A. Bowers, Gardiner G. Hubbard, Joseph C. Hornblower, Bernard E. Fernow, Nathaniel Wilson, Geo. P. Whittlesey, and Samuel Maddox, to me personally well known and known to be the persons whose names are signed to the foregoing and annexed certificate of incorporation, and did severally acknowledge the same to be their act and deed, and that they and each of them executed the same for the purposes therein set forth.

IN TESTIMONY WHEREOF I have hereunto set my hand and affixed my official seal this 25th day of January, A. D. 1897.

(Seal) FRANK D. BLACKISTONE,  
*Notary Public for the District of Columbia.*

## BY-LAWS

(Revised January 14, 1909)

### ARTICLE I

#### *Name*

The name of this Association shall be "The American Forestry Association."

### ARTICLE II

#### *Object*

The object of the Association is to promote the preservation, by wise use, and the

extension of the forests of the United States; its means are agitation and education; it seeks to encourage the application of forestry by private owners to forest holdings large or small; and it favors, especially, the establishment and multiplication of National and state forests, to be administered in the highest interests of all.

### ARTICLE III

#### *Members and Dues*

Section 1. Any person may become a member of this Association, as hereinafter provided.

Sec. 2. Members shall be divided into five classes: Patrons, Life Members, Sustaining Members, Annual Members, and Honorary Members.

Sec. 3. Any person contributing at one time the sum of one thousand dollars (\$1,000) to the permanent fund of the Association shall be a Patron. Any person may become a Life Member by the payment of one hundred dollars (\$100) at one time. Patrons and Life Members shall not be liable for annual dues. Sustaining Members shall be those who pay annual dues of twenty-five dollars (\$25). Any forestry association or other organization approved by the Board of Directors may become a Sustaining Member. Annual Members are those who pay annual dues of two dollars (\$2). Honorary Members shall be the officers of state, territorial, provincial, or other forestry associations, or the delegates from such associations, or the delegates of any government.

Sec. 4. Applications for membership shall be referred to and voted upon by the Board of Directors at any regular or called meeting therefor.

Sec. 5. All members except Honorary Members shall be members of this corporation and shall be entitled to vote and hold office in said corporation.

Sec. 6. Dues are payable when any member is elected, and for each succeeding calendar year on or prior to January 1st of said year.

Sec. 7. When any member is elected after October 1st of any year the dues then paid include those for the following calendar year.

Sec. 8. The Board of Directors shall have the power to remit the annual dues of any member.

### ARTICLE IV

#### *Officers*

Section 1. The officers of this Association shall be a Board of Directors, a President, ten or more Vice-presidents at large, not exceeding twenty-one; a Vice-president from each affiliated organization, as hereinafter provided; a Treasurer, a Secretary, an Assistant Secretary, and two Auditors, neither of whom shall be otherwise officers of the Association.

Sec. 2. The Board of Directors, President, Vice-presidents at large, and Treasurer shall be elected by ballot at the Annual

Meetings of this Association and shall serve one year, or until their successors are elected. Provided the full number of Vice-presidents are not so elected at the Annual Meetings, the vacancies so occurring in making up the full number authorized by these By-Laws may be filled as provided in Article V of these By-Laws. The Auditors shall also be elected by ballot at the Annual Meetings of the Association, as follows:

Two shall be elected at the Annual Meeting in January, 1909, one for a term of one year, and one for a term of two years; and after said meeting in 1909, one Auditor shall be elected for a term of two years in place of the one whose term is about to expire, said Auditors to hold their positions until others are elected to serve in their places. The duty of said Auditors to be to audit the books and accounts of the Association at least annually and at such other times as may be required by the Directors.

The Secretary and Assistant Secretary shall be elected by the Board of Directors at the first meeting following the Annual Meeting of the Association, to serve at the option of the Board.

Sec. 3. Any forestry or other organization which may become a Sustaining Member shall be entitled to delegate as advisors of this Association three of its members, one of whom shall be elected by the Board of Directors a Vice-president of the Association. The advisers so elected from the various organizations shall constitute the Advisory Board of this Association.

### ARTICLE V

#### *The Board of Directors*

The Board of Directors shall consist of fifteen (15) members, of whom eight (8) shall constitute a quorum. It shall elect its own Chairman, and have the power to fill any vacancies in the offices of the Association, whether occurring from non-election at time provided in these By-Laws, or for any other cause, the one so elected to serve until the next Annual Meeting of the Association. The Board of Directors shall have the control and management of the affairs, funds, and property of the Association. It shall take, receive, hold and convey such real and personal estate as may become the property of the Association for the purposes of the Association set forth in the certificate of incorporation in Article II above. The Board shall meet at 4 p. m. on the day preceding that of the Annual Meeting of the Association; and the new Board, as soon as convenient thereafter. Also at such other times as may be determined by vote or as it may be called together by its chairman, or three members of the Board.

The Board of Directors shall designate seven of its members to act as an Executive Committee of the Association, to which Committee the Board shall from time to time entrust such duties as it will deem best in the interests of the Association.

## ARTICLE VI

*The President*

The President shall preside at all meetings of the Association.

## ARTICLE VII

*Vice-presidents*

In the absence of the President, a Vice-president shall preside at the meetings of the Association; and in the absence of all of them, a President *pro tem.* shall be elected by the meeting.

## ARTICLE VIII

*The Secretary*

The Secretary shall keep a record of the proceedings of the Association and of the Board of Directors; shall have the custody of the corporate seal of the Association and of all documents, books, and collections ordered to be preserved; shall conduct the correspondence of the Association, and keep a list of members with their addresses, notify members of the time and place of all meetings, and shall perform such other duties as may be assigned him by the Board of Directors.

## ARTICLE IX

*The Treasurer*

The Treasurer shall have the custody of all moneys received. He shall deposit and

invest the same in such manner and to such extent as the Board of Directors shall direct, and shall not expend any money except under the direction or approval of the Board of Directors. The financial year of the Association shall close on December 31st of each year.

## ARTICLE X

*Meetings*

Section 1. The Annual Meeting for the election of officers and the transaction of such business as requires to come before the entire Association shall be held on the second Wednesday in January, at such hour and place as the Board of Directors may determine, unless some other day in January be selected by the Board of Directors, in which case at least three weeks' notice must be given.

Sec. 2. A quorum shall consist of thirty (30) members of the Association (Patrons, Life Members or Annual Members), as specified in Section 5 of Article III.

Sec. 3. Special meetings may be called by the Board of Directors. The Secretary shall give to all members at least seven days' notice of all meetings.

## ARTICLE XI

*Amendments*

These By-Laws may be amended by a three-fourths vote of the members present and entitled to vote at the Annual Meeting of the Association.

## THE FIRST TREE

By HAZEL ALMA BANKS PIERCE

THE first tree stood forth. And it was day. The great trunk pillared heaven; its heavy, perfumed branches dragged low from the clouds in wreaths of sounding leaves; leaves of shadows and shimmering color, crystal, parchment, or thin-veined copper, glinting fire of emeralds.

And all the trees that were to live stood back in silent mist.

Like darting lights the gay winged birds flew glad about the tree, but gave no song, and their whirring wings brought all the stillness closer.

The day slumbered softly in the sun, save where some insect wound its way with cobweb wings over the tall noon grasses.

In the dusk-blown twilight the drowsy day still dreamed, while a breeze sang sweetly about the tree; a frail wind trailing over tangling buds of water-lilies and evening violets cold in cupped dew.

And night came with a moon of roses. Aimless fireflies and quaint glow-worms spun zig zag paths of color for the dim moth, the tardy beetle and a multitude of shadowy wings.

And the tree stood alone in a fragrant world.

And God said, "It is good."

## EDITORIAL

### Defeat of Appalachian Legislation—A National Loss

**I**N CONSERVATION for March appeared a news item announcing the defeat of Appalachian legislation by the Sixtieth Congress. To readers of this publication such announcements will, by this time, have lost the charm of novelty. Nevertheless, they must be recorded.

In this connection it should be said that the misfortune accompanying the defeat of this legislation falls not simply upon the region in which the mountains in question are located. It falls as well upon the country at large. The question of forests, water-powers, soil-preservation, stream-utilization, and resource-conservation in general is no more a question for a New Hampshire or a North Carolina alone than it is alone for this farmer, that mill-owner, or the other steamboat company. In the century-old discussion of protective tariff the Nation has become familiarized with the phrases, "our industries," "our labor," "our exports," "our imports," "our National prosperity," and the like. We have ceased to look upon the Nation as a mere aggregation of states, individuals, or interests. We have learned to take, at least a part of the time, the National view. We have come, in increasing measure, to recognize the Nation as a unit, an entity, economic and social, no one portion of which can suffer without detriment to all sections. The doctrine which Paul, 2,000 years ago, applied to the Church applies absolutely to the Nation: one member cannot suffer without all other members suffering with it.

One of the few blessings accompanying the unspeakable calamity of war lies in the fact that war compels a people to recognize this principle. A great conflict between nations becomes a test

of strength and endurance. Resources of every kind, animate and inanimate, are called into requisition for defense and offense. At such times it becomes evident to the veriest clown that the vital question regarding a public resource is not the geographical one of its location in this, that, or the other section of the country, but the practical one of its actual availability for a public need. If, in the midst of a great struggle in which the Nation's life and freedom were trembling in the balance, an individual or corporation were found destroying stores or resources needful for the public defense, a universal cry would be raised for the prompt application of adequate protective measures. People would talk of the need of protecting "our woods," "our water-powers," "our coal and iron," and what-not; and whoever dared then to oppose such a policy would be regarded as little better than a public enemy.

Happily, we are not engaged in war; nevertheless, in what fundamental respect does a nation's situation as regards its resources differ in time of peace from its situation in time of war? While nations compete in industry, as when they compete in war, victory, in the long run, will lie with the strongest. And strength lies in resources, material and human. What industrial standing has a nation whose natural wealth is wasted and whose population is depleted? We have recently been reminded of Asia Minor, once capable of producing a Croesus, the typical multi-millionaire of antiquity. Yet Asia Minor, with her resources long since looted and dissipated, now lies prostrate and helpless. Who, to-day, thinks of her as a competitor for world markets. Who thinks of industrial or commercial competition coming from Mesopotamia? Yet this valley was the seat of ancient empires. But here



again, as in Asia Minor, the natural resources have largely been destroyed.

Again, blessed as is peace, and ever to be desired and sought, what guarantee have we that the United States is permanently immune from war? Not long since, our armada encircled the globe, and hints have been dropped from high quarters that there was method in this apparent madness. At least one public man of ability, character, and standing, with a vehemence and zeal comparable with that of Demosthenes when he urged the Athenians to guard themselves against the designs of Philip of Macedon, traverses the country warning the American people against a condition which, after profound and detailed study, is manifestly, in his judgment, a menace to the United States. He, at least, is convinced, as was Demosthenes, that a foreign power has for years been plotting hostilities against this country. Furthermore, he assures his audiences that high authorities, unable to say so publicly, agree with him perfectly.

As to whether or not such a danger exists, this publication has no adequate knowledge and, therefore, no opinion to express. It is, however, prepared to propound a question:

Suppose a foreign power, or a combination of such powers, should attack the United States. Would it then be a matter of indifference to the Government at Washington, either legislative or executive, that our forests had been cut and burned away, and our resources in general ravished and despoiled in the manner already familiar to our readers? Would any one then raise the question whether supplies needful for the National safety were located in New England or the South, whether they were connected with the navigability of rivers, whether the attempt to save them might involve the stretching of constitutional powers or the spending of more money than was at first estimated? Instead, every rational reader knows that all such subterfuges and petty excuses would be swept aside like chaff; and, with them, if necessary, the statesmen hiding behind them. In tones which none would

dare ignore, the Nation would demand the opportunity to avail itself of its full strength; and that demand would be heeded.

And if it be necessary, in the face of actual war, to conserve the Nation's sources of strength, why should it not, while time and opportunity still remain, likewise be necessary in the face of possible war? And if it be necessary for purposes of war, why should it not be necessary for purposes of peace?

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#### Do They Represent the West?

IT IS noteworthy that the Appalachian bill was struck down in the Senate by the action of certain Rocky Mountain senators, notably Messrs. Teller and Heyburn. The questions naturally arise: Do these men represent the sentiment of the West? Shall we say that the Eastern forests bill was killed by the West? If so, what do we mean by the West? The territory west of the Mississippi, or of the Missouri, or of the Rocky Mountains, or that included in the Rocky Mountain states, or in certain of those states only?

Friends of Appalachian legislation vividly remember the aid extended by the East to the enactment of the Reclamation law, and are inclined to wonder whether the West, as such, is disposed to repay good with evil. The writer inclines strongly to the belief that the senators in question represent in no sense the whole West, no considerable section of the West, nor perhaps even the sentiment of the majority of the people in their own states. He notes the fact that one of the two senators named was, at the very moment he was slaughtering the Appalachian bill, ending his own career in the Senate. The other senator named had, it is true, just been re-elected; nevertheless, Forester Pinchot, it is credibly reported, not long since delivered an address on forestry in that very senator's town, and was applauded to the echo.

For the sake of the West, and of mutual good feeling between the sec-

tions, it is hoped that evidence will multiply still further justifying the opinion that the West, as such, does not sustain the reactionary attitude of the senators who have thus again blocked the passage of Appalachian legislation.



#### The Forest Service in Congress

READERS of CONSERVATION will be gratified to learn that the appropriation to the Forest Service for next year is greater, by \$750,000, than that of last year. A still greater increase would have meant a National economy; nevertheless, the fact that no ground was lost and that substantial gains were made affords cause for congratulation.

As was to be expected, the annual onslaught upon the Service by a few representatives and senators from mountain states occurred in due course. The remarks of Representative Mondell, of Wyoming, which received little consideration in Washington, and were presumably designed chiefly for home consumption, were typical, and notable chiefly for the variety and picturesqueness of their inaccuracies. His charge that the Service is wantonly extravagant is easily met by the facts; while his assertion that "the effort of the Forest Bureau is to grind every dollar it can out of the people of the West" is a characteristic product of "economic determinism." As Mr. Weeks pointed out, and as Mr. Shinn elaborates in his article in the current issue of CONSERVATION, some people living on or near the public domain have so long been accustomed to treating it as their private property, or as common, not to the whole people, but only to those living in the vicinity, that the assertion of National right in a National asset inevitably created friction.

That the ammunition of the critics is running low may be inferred from Senator Heyburn's charge that the Forest Service people have descended to the robbing of squirrels' nests to obtain pine-nuts. The senator men-

tions this as "an instance of the petty, trivial, mean way in which they are doing in this Service." "The poor squirrels," we are told, "gather the nuts, with the wing on the nut, take them into their nests in the fall at their leisure, take out the pine nuts and use the wing for nests." This practise Senator Heyburn denounces as "cruel," and intimates that if a boy should do such a thing, he would deserve to be "thrashed."

It is conceded that the Forester does avail himself of the labor of squirrels in the gathering of pine-nuts; it seems, furthermore, that this "private property" is "taken for public use without just compensation;" it would appear, therefore, that the senator, being a lawyer, might bring action against the Service for violation of Article 5 of the Amendments to the Constitution of the United States and such legislation as has been based upon it.

When George Stephenson, the improver of the locomotive, was asked what would happen if a cow got in front of his engine, he declared that "it would be hard on the coo." In like manner, it must be conceded that the above-mentioned practise of the Forest Service is a little hard on the squirrels: nevertheless, should these interesting denizens of the forest appear, whether through Senator Heyburn as counsel, or otherwise, as complainants, it should not be overlooked that "there are others." For some ages past mankind has resorted to practises analagous to, if not identical with those criticised. Senator Dolliver suggested that honeybees were subjected to similar treatment. In like manner, it should be noted, man has for some time resorted to cows and goats for milk, and to sheep for wool; he has not hesitated to avail himself of the labor of the ox and horse, and he has even been known to consume the flesh of the lower animals, including squirrels, to appease his hunger. In mentioning the above, full credit is given to the magnificent work which such bodies as the Society for the Prevention of Cruelty to Animals are doing; nevertheless, when it

is remembered that men in Senator Heyburn's section have, in cases, been suspected of helping themselves, by questionable means, to public lands, including the metals and mineral under the surface of the lands, the forests growing upon them, and even the squirrels themselves which gambol in the branches of those forests, it would seem that, for a charge preferred upon the floor of the Senate of the United States, the one under consideration is somewhat lacking in dignity and weight.

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#### Public Advantage from Reclamation

IN A news item in this issue appears a statement regarding the progress of the work of draining the Florida Everglades. Lands hitherto valueless are being redeemed. We are informed that a vigorous demand has already sprung up for these lands, and the state could easily dispose of every acre of them. It is recognized, however, that, with the progress of the drainage, the value of the lands will steadily enhance until, by the completion of the work, they will attain such figures as are obtained for the rich coal lands of the western states. This region, it is expected, will be converted from a habitation of Seminoles and crocodiles into a home area for thousands of prosperous and contented farmers.

Next follows a still more interesting statement. We are told that, instead of converting all these lands into private ownership, the Drainage Board has wisely *reserved each alternate section*, from which the state will, in time, reap a substantial reward in the great enhancement of value which is certain to follow the success of the reclamation project.

As is well known, numerous western states, in converting public into privately owned lands, reserved one section in each township for public-school use. Some of the younger states went further and reserved two sections in each township. One of these school sections lies in the heart of the city

of Chicago; it is still public property, and the land is now enormously valuable. Had the school sections been generally retained by public authority and properly administered they would, in numerous instances, have proved gold mines for the promotion of public education, instead of, as was frequently the case, for the multiplication of "swollen fortunes."

A valued correspondent calls attention to the principle of the Revolving Fund, in accordance with which public moneys, appropriated for improvement purposes, do not inure wholly or primarily to private advantage, but are recouped from the proceeds of the improvements, and made available for repeated uses. For example, the fund used by the Reclamation Service, beginning with a little more than \$3,000,000, and amounting now to above \$51,000,000, is a permanent fund. The Government uses it to reclaim an arid or semi-arid region, receives back from the users of the irrigated lands the equivalent of the funds actually used in reclamation work, and is thus in position to irrigate still other lands; so to continue, personally, *ad infinitum*, until there shall remain no other desert worlds to conquer.

The same principle has been introduced into one, at least, of the bills before Congress for the drainage of swamps. Its workings in the case of the Reclamation Service are admirable. In the case of a great National drainage service there is excellent reason to believe the principle would work equally well.

Why, now, is not this principle susceptible of much wider application? It is conceded that certain great public improvements, if effected at all, must be initiated, carried through and paid for by the public. On what ground or principle can we justify a policy which then transfers the sole or chief benefit of such improvements to private individuals and corporations? If individuals are to enjoy the proceeds, why should they not bear the burdens? If, on the other hand, the public must do the work and pay the bill, should it not

at least share substantially in the fruits? The revolving fund, on the one hand, and the publicly reserved, alternate sections in the Everglades on the other, are well worthy of careful consideration.

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#### The North American Conservation Conference

**I**N CONSERVATION for March appeared the report of the North American Conservation Conference at Washington, participated in by Canada, Newfoundland, Mexico, and the United States. The proceedings of this, the first body of its kind in history, were harmonious, and marked by wonderful unanimity. This fact affords added ground for faith in the encouraging declaration of Senator Smoot that the success of the conservation movement is now assured; that the people who formerly called the leaders dreamers have seen a new light, and are now firm believers in the absolute necessity of saving the woods and waters.

True, the Congress of the United States does not appear, as yet, to be fully in sympathy with the movement. This is indicated by its failure, a year ago, to create a conservation commission, by the declarations of Senator Newlands at the recent conference that the legislative branch of the Government had not done so much for conservation as it should have done, and that there seemed to be a feeling in Congress that commissions are, in some way, trying to usurp the functions of Congress; by the failure of Congress in its last session to provide funds for the National Conservation Commission, and by its disallowance of the performance of such work by existing Government employees on Government time. Nevertheless, ways will be found for prosecuting the work. The Congressional inhibition does not apply to the governors of the states; and to these, it is understood, the commission will have to look, for the present at least.

For those who believe that the chief function of government is to promote the public good, and make the world

more habitable, and life, for the average citizen, better worth living, there is much ground for congratulation in the broad character of the principles enunciated by the conference which met at Washington on February 18-20 last. As has so often occurred in historical crises, human rights were again asserted, and were traced back to their source, behind governments, laws, and constitutions, to Nature itself. The commissioners declare: "We agree that these resources should be developed, used, and conserved for the future, in the interests of mankind, whose rights and duties to guard and control the natural sources of life and welfare are inherent, perpetual, and indefeasible."

Strong ground is taken against monopoly. The commissioners assert: "We agree that those resources which are necessities of life should be regarded as public utilities; that their ownership entails specific duties to the public, and that as far as possible effective measures should be adopted to guard against monopoly." "We regard the monopoly of waters, and especially the monopoly of water-power, as peculiarly threatening. No rights to the use of water-powers in streams should hereafter be granted in perpetuity," etc. "In the interest of the homemaker, we favor regulation of grazing on public land, the disposal of public lands to actual settlers in areas each sufficient to support a family, and the subdivision of excessive holdings of agricultural or grazing land, thereby preventing monopoly." Speaking of mineral fuels, the commissioners recommend that "Such fuels should hereafter be disposed of by lease under such restrictions or regulations as will prevent waste and monopolistic or speculative holdings, and supply the public at reasonable prices." Of mineral fertilizers, they say: "Mineral fertilizers should not be monopolized by private interests, but should be so controlled by public authority as to prevent waste and to promote their production in such quantity and at such price as to make them readily available for use."

The governmental right to protect the public against extortionate charges

is asserted. In the paragraph on waterways we read: "The public authority should retain the right to readjust at stated periods the compensation to the public and to regulate the rates charged, to the end that undue profit or extortion may be prevented." The same idea appears in the paragraph on minerals above quoted, where provisions are recommended whereby the public may be supplied at "reasonable prices."

Public participation in enterprises of public interest is advocated. In discussing waters the commissioners say: "We therefore favor the participation of the public to secure the complete and economical development and use of all water available for irrigation and of all lands susceptible of profitable drainage, in order to ensure the widest possible benefit."

In sections of the mountain states, the question of Government regulation of grazing on public lands is a burning issue. The commissioners, however, as noted, unequivocally declare for it, "in the interest of the homemaker."

Public control of resources needful for the public good is repeatedly advocated; implicitly in the paragraph on forests which reads: "We agree that the ownership of forest lands, either at the headwaters of streams or upon areas better suited for forest growth than for other purposes, entails duties to the public, and that such lands should be protected with equal effectiveness, whether under public or private ownership."

The recommendation is made explicitly in the following instances: "We further express our belief that all waterways so developed should be retained under exclusive public ownership and control;" "In the matter of irrigation public authority should control the headwaters;" "We \* \* \* favor Government control of such lands (non-irrigable public lands too dry for cultivation) in order to restore their value, promote settlement, and increase the public resources;" "Mineral fertilizers should not be monopolized by private interests, but should be so controlled by public authority as to pre-

vent waste and to promote their production in such quantity and at such prices as to make them readily available for use."

In discussing waters, the commissioners express themselves as follows: "We therefore favor the development of inland navigation under general plans adapted to secure the uniform progress of the work and the fullest use of the streams for all purposes. We further express our belief that all waterways so developed should be retained under exclusive public ownership and control." Nor are they willing that private property rights shall stand in the way of such a policy, for under the same head they advise that "Where the construction of works to utilize water has been authorized by public authority and such utilization is necessary for the public welfare, provision should be made for the expropriation of any privately-owned land and water rights required for such construction."

Such declarations from such a source and such a vantage ground cannot fail to be heard. Furthermore, so transparent is their equity and so pressing is the need for the steps indicated, that, being heard, such proposals must, sooner or later, be heeded.

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#### Conservation of the Resources of the Planet

MARK the sweep of the conservation movement! First, we have had forestry on a small, and then on a gradually enlarging scale. Next came the movement to conserve the resources of the United States. In less than a year this developed into an effort to conserve the resources of North America; and now, growing directly out of this latter movement, comes the dramatic proposal to convene a conference to promote the conservation of the resources of the World.

This World-Conference, it is proposed, shall meet next September at The Hague, the headquarters of international gatherings.

The initiation of this movement came from President Roosevelt. Secretary



Root stated to the North American Conference that the President foresaw the possibility that that conference would be the precursor of a World-Conference, and that, by an aide-memoire in January last, the principal governments were informally sounded as to whether they would look with favor upon an invitation to send delegates to such a conference. Responses were uniformly favorable. Following upon this came the proposal from the North American Conference that such a gathering be held. In view of the progress already made, it is conceded that the conference will be held at the time and place named. In his valuable article in this issue, continuing the one from his pen in the last, Mr. Treadwell Cleveland, Jr., of the Forest Service, discusses this conference, and formulates the problems which may be expected to confront it.

As the Secretary of State points out, the object of the conference might well be to plan an "inventory of the natural resources of the world, and to devise a uniform scheme for the expression of the results of such inventory, to the end that there may be a general understanding and appreciation of the world's supply of material elements which underlie the development of civilization and the welfare of the earth."

In view of facts now common knowledge regarding the destruction of natural resources in the Old World and the New, the propriety and desirability of such a conference should be clear. As was stated in the preliminary aide-memoire, "The people of the whole world are interested in the natural resources of the whole world, benefited by their conservation, and injured by their destruction." It is upon these resources that the human race, for whatever progress and prosperity it may in future enjoy, must, so far as can be anticipated, rely to the end of time. And so powerful has become the enginery of modern industrial civilization, and so gigantic and rapid the consumption and waste of the earth's stock of raw materials, that, unless measures are

promptly taken to safeguard the residue, race well-being, to the remotest future time, may, in a brief, historic period, be seriously handicapped.

The present age demands facts. If William the Conqueror was justified in bringing together the materials which make up the famous Domesday Book, and if the United States Census policy of continually broadening the scope of our decennial inquiry is wise, why should it not be wise to enable the world to know the size of its bank account, as represented by its natural resources? There seems to be but one way to ascertain the facts—namely, by concerted action, such as an international conference implies. Again, there is but one way to make the results of such an inquiry available—namely, by "devising a uniform scheme for the expression" of these results, and then their publication.

Such material, it is true, may be utilized by special interests, as speculators; yet, while such interests exist, this result cannot well be avoided. The data will also be widely used by economists, and especially, it is fair to assume, by representatives of governments in the formulation and administration of national policies.

Even larger results may be expected to follow. Through the invention and improvement of agencies of transportation, communication, and the diffusion of knowledge, the world is fast becoming one great neighborhood. The broad doctrine enunciated by the President, so contrary to the old-time, national particularism and exclusiveness in accordance with which each nation was prone to think of its own gain as directly proportional to the losses of its neighbors—the doctrine that the nations must rise or fall together, that each is part and parcel of one common whole, that the social organism extends beyond national lines and includes the race—such a doctrine must receive renewed emphasis at every delegated meeting of the nations of the world such as it may be hoped will follow from the one of next September. As a means of promoting international peace,



such a movement should compare favorably in importance with the Peace Conferences already held at The Hague. And with peace, inter-communication, the fuller acquaintance following from comparison of views at short range and the realization that the aims of all nations, as of all individuals, are substantially identical, there must necessarily follow a closer knitting of the bonds of international fraternity and a hastening of the realization of the poet's dream of

"The parliament of man,  
The federation of the world."

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#### Private "Rights" in Public Lands

THE familiar controversy in the public land states over the gradual attempts of the National Government to resume its rights in the public lands suggests another of the parallels with which history abounds. The most striking, perhaps, is that between our own case and that of Rome. Like the United States, Rome held at times vast areas of public lands. Like ourselves, again, she was exceedingly careless in the administration of these properties, and allowed them to drift, in vast areas, into the hands of private citizens. Where, with us, these public beneficiaries are frequently great cattlemen, sheepmen, lumbermen, and the like; with the Romans, they were the great nobles and capitalists. As with us, grazing among the Romans, by 200 B. C., had become a vast and highly profitable industry. Much of the rural population had been destroyed by Hannibal. Much of what remained was evicted, as in the sheep-grazing days of the English Tudors, that farming districts might be converted into pasture lands where cattle were tended by slaves. Rome's administration was, apparently, an improvement upon ours in one respect; she at least pretended to charge these occupants a tithe of the produce as a rental. In the collection of this, however, she was extremely lax, and occupants nominally tenants-at-will treated

the lands as their private property, even to the extent of selling them.

As population increased, evictions multiplied, and the numbers of landless proletarians became congested in the capital, the necessity became obvious for making the public lands available for such, and thus transforming men, otherwise beggars and disturbers of the social order, into self-supporting, self-respecting heads of families.

From time to time, therefore, attempts were made on the part of the state to resume, in part, its rights in the public lands. Such attempts, however, were resisted by the aristocratic occupants of those lands, even to the point of bloodshed.

The struggle over the public lands began early. About twenty-four years after the expulsion of Tarquinius Superbus, the consul, Spurius Cassius, attempted, by means of a so-called "agrarian law," to make a portion of the public lands available to citizens, and to compel the occupants of other public lands to pay their rents to the government. The attempt, however, was frustrated by the aristocracy, and Cassius, on his retirement from office, was accused of attempting to make himself king. He was condemned, scourged, and beheaded, and his house destroyed. In 367 B. C., the tribune, Licinius Stolo, secured the enactment of an agrarian law entitling each citizen to occupy not more than 500 jugera (250 acres) of state lands, and to pasture stock upon the public pasture lands.

By 133, when Tiberius Gracchus was elected tribune, this law had fallen into desuetude. The state, meanwhile, had acquired vast tracts of land; but these had passed not to the needy poor, in accordance with the Licinian law, but to the aristocracy of birth and wealth. Tiberius proposed that every father of a family might occupy 500 jugera of state lands for himself, and that each of his sons might have 250 jugera, the total for one family not to exceed 1,000 jugera; while all holdings in excess of these figures should be resumed by the state, with payment to occupants for improvements made by them. Tiberius

forced this measure through, but paid for so doing with his life. His brother Caius, later elected tribune, attempted to enforce the above "Sempronian" law, but, for so doing, was compelled to pay the same penalty as his brother.

In the light of such history, with other that might be cited, including the enclosure of the commons in England in the sixteenth century, we may understand that the private appropriation, or occupancy without leave, of public lands in the United States is no new phenomenon. However, we may feel encouraged that opponents of the Government's attempts to reassert its right in these lands, instead of executing its officials for treason, or beating them to death with fragments of broken benches, after the good old Roman fashion, merely consume time and breath in criticising them for robbing squirrels' nests.

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#### The Fight Just Begun

WHEN John Paul Jones, in battle with the Serapis, was asked whether he had "struck his colors," his reply was, "I have just begun to fight." This laconic declaration represents the viewpoint of the friends of Appalachian legislation. There are victories, such as was that of Pyrrhus, which presage defeat; and defeats, such as those encountered by George Washington in the American Revolution, which are merely milestones on the pathway to ultimate, permanent victory. A good cause may be obstructed and its triumph delayed by hostile tactics, but its final victory is sure. The proverb that "No question is ever settled until it is settled right" is to-day accepted as true by an ever-increasing multitude. For many years American abolitionists led an apparently forlorn hope. A former president of the United States, day by day and year by year, presented, in the House of

Representatives, petitions innumerable favoring limitation or abolition of human slavery, only to have them uniformly laid, first on and, later, under the table. Yet slavery was even then dying, and its disappearance is to-day approved by the descendants of those who were once its champions.

The persistency with which Appalachian legislation is opposed by a few, first in one house and then in the other, will but give zest to the fight, and will add strength to the arms of those who are convinced of its righteousness and resolved on its triumph. So absolute is the commitment of The American Forestry Association to this cause, and so fully convinced is this organization of the wisdom and necessity of this legislation, that its own course is predetermined beyond question. Like Nelson, in Trafalgar Bay, it recognizes that its membership and friends "expect every man" connected with its affairs "to do his duty."

It is not too soon to begin preparations for the next campaign. Now, in the interval which must elapse before the measure can again be presented in Congress, let the lines of battle be reformed, let the munitions of war be replenished and the organization strengthened and perfected for the renewal of the struggle. The resources of the United States must be conserved; National action to this end, including Congressional legislation, is essential; obstruction and dilatory tactics must be met; the people must be aroused still further and their demands focused more perfectly upon Congress, and the battle must be led by those already informed and aroused and pledged to this cause. No leader in thought and opinion for a moment counsels abandonment of the fight; instead, as in the Sinaitic wilderness of old, the cry again rings forth, "Speak to the people, that they go forward!"



## NEWS AND NOTES

### Wisconsin Gets Forest Laboratory

The Government's new forest products' laboratory will be located at the University of Wisconsin, at Madison. In naming Wisconsin, Gifford Pinchot, Chief of the United States Forest Service, said: "I have had few decisions to make which were so difficult or which have had such prolonged and careful consideration as the decision as to which of the offers for cooperation in establishing and maintaining a forest products laboratory I should recommend for acceptance by the Secretary of Agriculture."

The establishment of the laboratory means the concentration of all lines of the experimental investigations of the Government looking to closer and better utilization of timber and the checking of wood-waste. Forest Service laboratories for timber-test work at Yale and Purdue universities and the Government's wood-pulp and wood-chemistry laboratory in Washington will be consolidated and transferred to Madison as soon as practicable. A force of fifteen to twenty timber-test engineers, experts in wood preservation, wood-pulp manufacture, and wood distillation, will have charge of the work carried on. The laboratory will have an equipment valued at not less than \$15,000. The university will furnish the building, light, heat and power, and in return advanced students will have the use of the laboratory for special work in related lines.

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### Roads for National Forests

The Office of Public Roads of the Department of Agriculture is to cooperate with the Forest Service in drawing up plans for comprehensive systems of roads and trails on National Forests.

For the last two years Congress has provided funds for permanent improvements on National Forests, and a large part of the money thus made available has been and is being used for road and trail building. The amount is too small, however, in comparison with the total area of the forests, to make possible more than a very small beginning.

During the present summer an engineer of the Office of Roads will go over the ground on several of the Forests, and draw up plans which will be submitted to the Forester, and will serve to guide subsequent work. Where the roads planned for cannot be built, trails will, so far as possible, be made to follow the courses laid out, with the expectation that later they will be converted into roads.

The roads, trails, telephone lines, and fire lines already constructed on National Forests are proving of great value both in the work of fire protection and in serving the convenience of the public.

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### English Forest and Land Policy

After neglecting her forests for hundreds of years, Great Britain, as indicated in CONSERVATION for March, has come to the front with the most farsighted proposal for forest-work and land-improvement ever advanced by any nation in a single plan.

The recommendations just made to the British government by the Royal Commission on Afforestation and Coast Erosion will make England self-supporting in the production of timber if successfully carried out.

Great Britain has long been dependent upon outside sources for her wood supplies. But the constantly-increasing demand for wood, together with the overdrain already made upon these sources, indicates a world-shortage of wood unless those countries which now have to import are able to establish and maintain their forest independence and grow the needed wood at home. Most of the countries of Europe have taken care to keep up the home-wood output by looking after their forests before they were destroyed or hopelessly depleted, and managing them for a sustained annual yield about equal to the demand. The British Isles, however, are practically stripped of productive forests. If Great Britain is to grow her own wood, she will have to begin at the beginning, set out the seedlings on treeless ground, and wait for them to reach marketable size. The commission recommends that this work of starting future national forests from the seed be undertaken "as a sound and remunerative investment."

There is no question, the report says, that substantially the anticipated results can be obtained. Experts testified before the commission that "the production of timber in Great Britain will be more rapid than in Saxony," which was selected for comparison on account of the close resemblance between the economic and physical conditions in the two countries. Yet, in Saxony, the net annual profits per acre from the national forests has increased 412 per cent. in ninety years, mainly, it was testified, because of "the more systematic and careful management." The lack of forests in Great Britain is the result, not of natural conditions, but of bad national economy. This is further proved by the fact that there are a number

The proposal of the commission is especially interesting to Americans in view of the fact that the measures that are now being proposed in the United States are so much simpler and less expensive. In this country the forests are already on the ground. All that is necessary is to bring them to a state of full productiveness. The present annual production of forests in the United States is scarcely more than twelve cubic feet per acre of all kinds of wood. The centuries of experience in Saxony, Switzerland, and France show that the same kind of land will grow three to eight times as much wood under wise forest management. Protection and proper cutting, begun now and steadily followed as a policy, will keep America, except in the prairie region, from reaching a point where, as in Great Britain, it will be necessary to start the forests of the future from the seed, and wait for them to grow. A title of the great outlay which the British commission contemplates would easily guarantee this country's forest independence for all time. And the wood needed each year could be got out of the forests right along.

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#### A German on International Conservation

Mr. Hermann F. Essig, of Stuttgart, Germany, who came to the United States to see the inauguration of President Taft, showed deep interest in international conservation. Speaking to a reporter for the *Washington Herald*, he said that, although conservation has been reduced to a science in Germany, and that there was not much which that country could learn in the line of conservation at an international conference, Germany would be only too glad to be represented, and give all the other participating powers the benefit of her researches and experience along these lines.

There is no country on earth where forestry has been made such a thorough study and science as Germany. There are quite a number of forestry schools throughout the German empire, where everything pertaining to the subject is taught from A to Z. The German government realized years ago that a nation without trees was inevitably doomed, and has set to work to preserve its forests. There is no such thing as waste of trees or timber or forests in Germany.

"If you own a forest, as proprietor of it, you are not allowed to fell trees or cut timber without first having received the permission to do so from the government forester. He will point out to you what you may cut, how much of it, and where. He will also point out to you that you will have to replant tree for tree, and he will keep an eye on you that you will not fail. This rule applies as well to public forests. You are not even permitted to gather brush or undergrowth in the woods without a permit from the government.

"America owes a debt of gratitude to President Roosevelt, who, by creating the

Conservation Commission, has halted the wanton destruction of forests and other natural resources. He will go down in history as a great president and a great public benefactor. His acts are not correspondingly appreciated yet, but they will be before many years have passed. There is one thing Americans may rest assured of, and that is he will receive the greatest ovation ever accorded to any living being in Germany, outside the Kaiser himself. We think the world of Roosevelt in Germany."

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#### Kansas Catalpas Pay

A valuable experiment in artificial forestry has just been concluded in Greenwood County, Kansas. The result has demonstrated that many thousands of acres in Kansas not utilized for pasture and not adapted for fruit trees can be profitably planted with quick-growing hardwood timber. Locust has been tried in many parts of the state, but, with the exception of Clark and Mead counties, it suffers so severely from the ravages of the borer that it is practically useless when cut. A variety of catalpa, *Catalpa speciosa*, however, appears to be immune from this pest. This is the tree that has been tried in Greenwood County.

In 1887 and 1888 George M. Munger bought a quarter-section of upland eight miles north of Eureka, Kans., for \$1,000, and planted 130 acres in catalpa at a further cost of \$1,500, including the price of trees, breaking out, plowing, and cultivation for two seasons. It was a poor class of soil with a large proportion of alkali spots, but after ten years' growth he began to cut and in four years netted \$4,000 above the cost of cutting and handling. In 1903 he sold the farm to E. P. Riggall for \$16,000, thus making a net profit of \$17,500 on the whole transaction. The present owner has now cut and shipped the balance of the first growth. After deducting the purchase price and cost of cutting and handling, he has netted \$10,000 in these five years. Next year he will be able to begin cutting the second growth.

#### VALUABLE FOR FENCE-POSTS

Besides the advantage of a sure and easy growth, the wood of the *Catalpa speciosa* is of a better quality for fence-posts than walnut and locust.

The trees are planted as yearlings, four feet apart, making 2,300 to the acre. They are left alone for twelve months and then cut clean off at the ground level. After this there is nothing to be done but wait eight years, when they will be ready to cut for market. The close planting makes a straight growth and under the shade of the broad leaves the unnecessary shoots die off.

## WHAT THE FARM PRODUCED

The following list shows the proportion of posts and telegraph poles cut by G. M. Munger and E. P. Riggle on the Catalpa Knob plantation. The posts are graded in thickness, varying from two and one-half to five inches:

First-grade posts.....	8,017
Second-grade posts.....	102,700
Third-grade posts.....	133,770
Fourth-grade posts.....	142,480
Fifth-grade posts.....	48,750
Telegraph poles.....	19,045
Total.....	454,762

The average price received for each post was just under  $7\frac{1}{2}$  cents; the cost of cutting, 1 cent, and of hauling  $\frac{1}{2}$  cent, thus netting about 6 cents a post, or about \$27,285 on the whole crop.

There are two other successful catalpa plantations in Kansas—the Yaggy plantation at Hutchinson and the Hunnewell at Farmington.



## Draining the Everglades

The work of draining the Everglades of Florida is progressing in a satisfactory manner. Hon. A. C. Croom, of Florida, recently devoted some two weeks to inspecting the dredges and draining operations in the Everglades, and, on his return, gave an encouraging report of progress. The end of the year, he claims, will disclose the reclamation of a considerable portion of this vast area of hitherto valueless land. Money is to become available from the Bolles' sale, and this fund will be utilized as fast as possible in furtherance of the great project.

A vigorous demand has already sprung up for these lands, and the state could now easily dispose of every acre of them. It is recognized, however, that with the progress of drainage, the value of the lands will steadily enhance, until, by the completion of the work, they will command such prices as are obtained for the rich prairie lands of the western states.

This project, if successful, will open up for settlement a section almost as great as the states of Massachusetts, Rhode Island, and Connecticut combined, and richer in fertility than the valley of the Nile. Instead of being a habitation of Seminoles and crocodiles, it is expected to become, within a few years, the home of thousands of prosperous and contented farmers. Instead of converting all these lands into private ownership, the Drainage Board have wisely reserved each alternate section in the recent sale and, by so doing, will reap for

the state a substantial reward in the great enhancement of value which is certain to follow the success of the project.



## Opening of the Payette-Boise Project

Five thousand people, including representatives of the Reclamation Service, Governor Brady, and members of the Idaho Legislature, witnessed, on February 22, the formal opening of the Payette-Boise Project, one of the largest reclamation works undertaken by the Federal Government. When the head-gates of the canal were raised, the waters of the Boise Valley were diverted to more than 200,000 acres of land.

The scene of the ceremony was at the big dam, eight miles above Boise, which provides the source of water for the south side section of the project. From this point water is diverted into canal systems covering Ada and Canyon counties. One canal carries water to the Deer Flat Reservoir, which is the largest artificial body of water in the world. This reservoir will be filled before the irrigation season begins, and waters will be stored for use during the dry season.



## Progress on the Uncompahgre Project

An advance of 600 feet was made on the Gunnison Tunnel, Uncompahgre Irrigation Project, Colorado, during February, leaving only 2,340 feet between headings on March 1. At the river portal fifty feet of tunnel were timbered and forty-five feet lined with concrete. In the west heading 345 feet of lining were placed. At the present rate of progress the opening should be made in July, but so much difficult material has been encountered in excavating this tunnel that it is not safe to make any predictions. The flow of water throughout the month of February amounted to 8.5 second-feet at the west portal and 1,282,000 gallons per day at east portal. There was an unusual number of storms during the month, which greatly increased the difficulty of handling sand and gravel in concreting in renewing and repairing structures, but the work of cleaning the canal system was nearly completed. The heavy snowfall in the mountains gives promise of a better water supply than the valley has enjoyed for many years.



## Lands Restored to Public Domain

About 130,000 acres of land which were withdrawn from any form of disposition whatever under the public land laws, in connection with the Salt River Irrigation Project, Arizona, have been restored to the



public domain and will be subject to settlement on and after June 3, 1909, but will not be subject to entry, filing, or selection until July 3, 1909. No person will be permitted to gain or exercise any right whatever under any settlement or occupation begun after February 26, 1909, and prior to June 3, 1909, all such settlement or occupation being forbidden. These lands lie in townships 1, 2, and 3 N., R. 1 and 2 W., Gila and Salt River Meridian.

In addition to the area thus restored, about 184,000 acres which were withdrawn under the same project from any form of disposition except homestead entry, have been restored subject to settlement and entry on the same dates. Settlement and occupation on this tract between January 28, 1909, and June 3, 1909, are forbidden. These lands lie in townships 4 to 7 N., R. 1 to 3 E., Gila and Salt River Meridian.

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#### Regulations Applying to Government Irrigated Lands

The Secretary of the Interior has just issued the following regulations, which are of importance to settlers on the Reclamation Service projects:

"1. *Reclamation of lands entered subject to the provisions of the Reclamation Act.*—To establish compliance with the clause of the Reclamation Act that requires reclamation of at least one-half of the irrigable area of an entry made subject to the provisions of the act, entrymen will be required to make proof showing that the land has been cleared of sagebrush or other incumbrance and leveled, that sufficient laterals have been constructed to provide for the irrigation of the required area, that the land has been put in proper condition and has been watered and cultivated, and that at least one satisfactory crop has been raised thereon.

"2. *Reclamation of lands in private ownership.*—The express purpose of the Reclamation Act is to secure the reclamation of arid or semi-arid lands and to render them productive, and Section 8 declares that the right to the use of water acquired under this act shall be appurtenant to the land irrigated, and that beneficial use shall be the basis, the measure and the limit of the right. There can be no beneficial use of water for irrigation until it is actually applied to reclamation of the land. The final and only conclusive test of reclamation is production. This does not necessarily mean the maturing of a crop, but does mean the securing of actual growth of a crop. The requirement as to reclamation imposed upon lands under homestead entries shall therefore be imposed likewise upon lands in private ownership, namely, that the landowner shall reclaim at least one-half of the total irrigable area of his land for agricultural purposes, and no right to the use of water for such lands shall permanently attach until such reclamation has been shown.

"3. *Delinquency.*—Under Section 5 of the Reclamation Act, 'A failure to make any two payments when due shall render the entry subject to cancellation with the forfeiture of all rights under this act, as well as of any moneys already paid thereon.' This provision evidently states the rule to govern all who receive water under any project, and accordingly a failure on the part of any water-right applicant to make any two payments when due shall render his water-right application subject to cancellation with the forfeiture of all rights under the Reclamation Act, as well as of any moneys already paid to or for the use of the United States upon any water right sought to be acquired under said act. In the case of one who has made homestead entry subject to the terms of the Reclamation Act the entry shall be subject to cancellation in case of such delinquency in payment, whether or not water-right application has been made by him.

"4. *Operation of sub-laterals.*—The control of operation of all sub-laterals constructed or acquired in connection with projects under the Reclamation Act is retained by the Secretary of the Interior to such extent as may be considered necessary or reasonable to assure to the water users served therefrom the full use of the water to which they are entitled."

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#### Mrs. Fairbanks for Conservation

The following interesting correspondence passed between Mrs. Lydia Adams-Williams, First Vice-president of the Woman's National Rivers and Harbors Congress, and Mrs. Cornelia C. Fairbanks, wife of Charles Warren Fairbanks, late Vice-president of the United States:

"Atlantic Building.

"Washington, D. C., Feb. 28, 1909.

"Mrs. Charles Warren Fairbanks, Washington, D. C.

"My dear Mrs. Fairbanks: Mrs. Hoyle Tomkies, President of the Woman's National Rivers and Harbors Congress, has suggested that I call upon you to ask you to accept the office of Second Vice-president of the Woman's National Rivers and Harbors Congress.

"The Congress was organized at Shreveport, La., June 29, 1908, at the instance of Hon. Joseph E. Ransdell, President of the National Rivers and Harbors Congress, with seven members; at the time of the first biennial meeting, held in Washington last December, the Congress had grown to a strength of 1,500. Its strength is, perhaps, double that at the present time.

"The objects of the Congress are the preservation of the forests, the development of the waterways and harbors, and the conservation of the natural resources of the Nation.

"In the face of the almost insurmountable obstacles placed in the way of conserv-



ing the forests and other natural resources, it is obvious that but little progress will be made until the women of the country collectively take up the work.

"It is not necessary to enlarge upon the good that may be accomplished by women earnestly banded together for the welfare of the children of this and of future generations.

"The Woman's National Rivers and Harbors Congress has the endorsement of Mr. Gifford Pinchot, Chairman National Conservation Commission and Chief Forester of the United States, who says: 'You are to be congratulated upon your organization of the Woman's National Rivers and Harbors Congress. \* \* \* You have my best wishes for success in the important work you have undertaken.'

"Knowing the vast value of your assistance and the powerful influence for good which may be accomplished by your joining us, I herewith respectfully ask you to accept the office of Second Vice-president of the Woman's National Rivers and Harbors Congress.

"Yours very truly,

(Signed) "MRS. LYDIA ADAMS-WILLIAMS,  
"First Vice-president of the Woman's National Rivers and Harbors Congress, Corresponding Secretary of the Woman's National Press Association, and Chairman of the Waterways Committee of the District of Columbia Federation of Women's Clubs."

"1701 K St. N. W.,

"Washington, D. C., Feb. 28, 1909.

"Mrs. Lydia Adams-Williams, Atlantic Building, Washington, D. C.

"My dear Mrs. Adams-Williams: You and the Woman's National Rivers and Harbors Congress are very good to desire my cooperation, and if I can aid in helping the grand work of conservation of our forests by becoming Second Vice-president of the Congress, I am pleased to accept.

"I think that the object of your organization is one highly to be commended, and for the success of which I have every good wish.

"I thank you for your kind expression toward me, and I think your unselfish devotion to the cause is one worthy of all praise.

"Thanking you for your kindness, I am,

"Very cordially yours,

(Signed) "CORNELIA C. FAIRBANKS

("Mrs. Charles Warren Fairbanks)."

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#### What a Timber Patch Can Do

"Mr. Editor: I would like to hear something on the subject of planting and raising forest trees—the best kinds, the best ground for them, and the best way of planting. Here in Nemaha County we have plenty of timber, but it is being destroyed so fast that I fear we shall regret it when it is too late. For thirty years I have owned 160 acres, with some twenty acres of native timber on it.

I have had all the poles and posts I needed for the farm all these years, and still have three times the timber there was on the land forty years ago, when I came here. That is better than nine-tenths of the farms have done.

T. K. MASHITER.

"Sabetha, Kans."

The writer has done well. By corresponding with The Forester, Washington, D. C., he can doubtless obtain the information he desires on the planting and raising of forest trees. The Forest Service carries a splendid line of documents intended especially to aid in every way in conserving and renewing the forests of the United States.

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#### Forest Conservation in Hawaii

That substantial interest in forestry exists in Hawaii is made clear by the accompanying editorial from a Honolulu paper:

"Hawaii has suffered so much from depredations on its forests, by animals, fire, and insects, that an active movement to save the watershed trees and increase their number or to create popular interest in saving them is most welcome. While in Washington recently, Mrs. A. F. Knudsen, with the personal approbation of the President, took up the matter for Hawaii at the Woman's National Rivers and Harbors Congress; and she has come back to interest the public, particularly the women, in this work. It is surely a fortunate circumstance. Abundant and healthy forests, besides giving these islands half their beauty, are of untold economic importance to their inhabitants. A land denuded of its trees either becomes a desert, or a place which is only practicable for agriculture a part of the year. Spain became impoverished for several reasons, chief among them deforestation; and so, for that matter, did large areas of China. Writers since the time of Strabo have pointed out the peril of forest denudation, many of them contending that large wooded areas actually increase the rainfall. However that may be, they assuredly conserve it, holding water in their deep mosses and mold, under thick shade, which, if exposed to the direct rays of the sun, would soon dry up. Torrential rains, even, are taken into these natural reservoirs and held for gradual distribution during dryer months, keeping the streams and springs alive, whereas, if they had fallen on denuded ground, they would have torn wide furrows in their rush to the sea, carrying vast quantities of arable soil with them. Under conditions like these, what would Hawaii be worth? Already tens of thousands of acres of watershed land have lost their trees, the process beginning when the old chiefs sold the sandalwood. Then came the goats and wild cattle which ate and are still eating the herbage over the shallow rootage of forest growths, thus drying out the moisture by which the trees subsist and making conditions right for fires. Adding to this the damage done by borers, insects

which were formerly kept in check by native woodpeckers, birds now almost extinct, we have a state of things which leads toward the ruin of agriculture as well as landscape beauty.

"It is time to act in self-defense. It is time to make war on the goats as California did on the coyotes, by offering bounties for their scalps or fresh skins. It is time to compel the cattlemen to fence their lands along the forest border and to slaughter or capture the wild cattle which have wandered from their herds into the deep woods. More foresters and fire-wardens are needed and more tree-planting on the public domain. There is nothing of the fad in this; and the process is as much needed here as in the other parts of the United States, where large sums of public money are being expended on forest-preservation."

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#### War on the Prairie Dog

In cooperation with the stockmen, the United States Forest Service has begun an active campaign against prairie dogs on the infested ranges within the National Forests of Arizona and New Mexico. Successful attempts at poisoning prairie dogs were made last spring and summer by the Forest Service in other parts of the country, and this year the work will be carried on much more extensively.

The poison used to put an end to these little pests of the western ranges is prepared by coating wheat with a preparation of strychnine, cyanide of potassium, anise oil, and molasses. The stockmen supply horses and men, and the poisoned wheat is given out by the Government officers for distribution upon ranges within the National Forest areas. Each rider carries the wheat in a tin pail supported by a gunny-sack slung across his shoulder. One hand is free for the reins and with the other the rider uses a teaspoon to measure out the poison in "baits" and drop it near the entrance of the holes. The action of the poison is almost instantaneous. Most of the prairie dogs in a town are dead within an hour or two after the bait is dropped.

Early last month 9,300 pounds of wheat were prepared in Albuquerque and shipped to the various National Forests in Arizona and New Mexico to be distributed. This quantity of wheat will make approximately 6,020,000 baits, which will clear up an area of from 65,000 to 80,000 acres, at a cost, exclusive of the labor of distributing it on the ranges, of about 1 to 1½ cents an acre. The poison is used to best advantage in the early spring, when the dogs first come out of their winter quarters, and before the green grass is plentiful enough to appease their appetites.

As all Westerners know, prairie dogs are among the worst enemies with which the stockmen have to contend. Where they es-

tablish themselves the destruction of the range is only a question of time. On ranchlands they have proved most destructive to a variety of crops, among which are wheat and alfalfa, grain, potatoes, and sugar beets, and on grazing lands they are said to consume and destroy so much grass that the grazing capacity of the range is reduced fifty to seventy-five per cent.

It is expected that the campaign against the dogs in the Arizona and New Mexico Forests will be most successful, as it has met with universal favor among the stockmen, who are giving every assistance to the Forest Service men. Range improvement in National Forests is one of the chief objects of regulating the grazing, and for this reason the Forest Service is leaving no stone unturned to prevent range deterioration.

Stockmen and others who wish to try the poisoning on their own account can obtain the formula for its preparation and direction for its use from the district forester at Albuquerque, N. Mex., or from the Forest Service, Washington.

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#### Timber Supply of United States

"We are now cutting timber from the forests of the United States at the rate of 500 feet board measure a year for every man, woman, and child. In Europe they use only sixty board-feet."

Few statements could be made better than this to convince the average man that our country leads the world in the demand for timber. It is made by Treadwell Cleveland, Jr., in a circular which treats of the conservation of the forests, soil, water, and all the other great natural resources, which has just been published by the United States Forest Service. In speaking further of the consumption of timber in this country, Mr. Cleveland says:

"At this rate, in less than thirty years all our remaining virgin timber will be cut. Meantime, the forests which have been cut over are generally in a bad way for want of care; they will produce only inferior second-growth. We are clearly over the verge of a timber famine.

"This is not due to necessity, for the forests are one of the renewable resources. Rightly used, they go on producing crop after crop indefinitely. The countries of Europe know this, and Japan knows it; and their forests are becoming with time not less, but more productive. We probably still possess sufficient forest land to grow wood enough at home to supply our own needs. If we are not blind, or wilfully wasteful, we may yet preserve our forest independence and, with it, the fourth of our great industries.

"Present wastes in lumber-production are enormous. Take the case of yellow pine, which now heads the list in the volume of

annual cut. In 1907 it is estimated that only one-half of all the yellow pine cut during the season was used, and that the other half, amounting to 8,000,000 cords, was wasted. Such waste is typical. Mr. R. A. Long, in his address on 'Forest Conservation' at the conference of governors last spring, pointed out that twenty per cent. of the yellow pine was simply left in the woods—a waste which represents the timber growing on 300,000 acres.

"The rest of the waste takes place at the mill. Of course, it would never do to speak of the material rejected at the mill as waste unless this material could be turned to use by some better and more thorough form of utilization. But in many cases we know, and in many other cases we have excellent reason to believe, that most, if not all, of this material could be used with profit. It is simply a question of intelligent investigation and, more than all, of having the will to economize.

"But there are other ways to conserve the forests besides cutting in half the present waste of forest products. The forests can be made to produce three or four times as rapidly as they do at present. This is true of both the virgin forests and the cut-over lands. Virgin forests are often fully stocked with first-class timber, but this stock has been laid in very slowly, on account of the wasteful competition which is carried on constantly between the rival trees. Then, too, in the virgin forests there are very many trees which have reached maturity and stopped growing, and these occupy space which, if held by younger trees, would be laying in a new stock constantly. As regards the cut-over land, severe cutting, followed by fire, has checked growth so seriously that in most cases reproduction is both poor and slow, while in many other cases there is no true forest reproduction at all at present, and there is but little hope for the future."

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#### Effect of Deforestation

"What has been the effect of the tremendous consumption of timber upon our forests?" This question is often asked by people in various sections of the country, and often the information of the average man on the subject is not definite enough to enable him to make a clear and satisfactory answer. R. S. Kellogg, assistant forester, engaged upon statistics in the United States Forest Service, in giving a concise answer to the important question, says:

"Now our annual requirements exceed 40,000,000,000 feet of timber, 100,000,000 cross-ties, 4,000,000 cords of pulp-wood, besides great quantities of other forms of forest products, such as firewood, posts, poles, mine timbers, etc. The per capita consumption of lumber in the United States was 215 board-feet in 1850; now it is 470 board-feet.

"One forest region after another has been attacked. With the exception of Maine, the

New England states are cutting mostly second or third-growth timber. The box factories there take white-pine saplings down to six inches in diameter. The so-called 'inexhaustible' white-pine forests of Michigan are gone, and millions of acres of cut-over and burned-over land have gone upon the delinquent-tax list. Michigan supplied twenty-three per cent. of the lumber-production of the United States in 1880, and less than five per cent. of it in 1907.

"The value of the lumber-production in Michigan since 1849 has been fifty per cent. greater than the output of gold in California, and it has all taken place without a thought for the future. The cream of our hardwoods is gone, and it is becoming more and more difficult to get in sufficient quantity the high grades of oak, yellow poplar, ash, and hickory that our great manufacturing industries require. The South's once great supply of yellow pine is rapidly giving way before ax and saw, fire and tornado. Half a generation more will, in most places, see little but remnants left of the Southern forests, and in that time the Pacific coast supplies will be heavily drawn upon.

"Ours is primarily a wood-using civilization. Despite the introduction of substitutes for wood in the form of stone, cement, concrete, and steel, our consumption of timber has constantly increased from the earliest days up to the present time. The prices of forest products have risen more rapidly than those of other commodities. According to the reports of the Bureau of Labor, the quoted prices of the leading kinds of lumber on the New York market have risen twice as much in the last ten years as the average increase in all commodities. This indicates that the supply of timber is not keeping pace with the demand."

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#### Improved Methods of Turpentine Bring Favorable Results

Through the improvement in the systems of turpentine the South has taken a long step forward in the movement for the protection and development of one of the country's most important natural resources, the rich yellow-pine forests, which make the United States the leading nation in the production of rosin, turpentine, and the other products known as naval stores.

Improved methods of turpentine were first established to an appreciable extent during the producing season of 1904, when the cup-and-gutter system was installed by a number of the most enterprising manufacturers of naval stores in Georgia and Florida. Since that time there has been a steady and satisfactory increase in the percentage of turpentine and rosin produced by those conservative methods. The work in conserving these vast turpentine orchards of the South has perhaps come in time to stay the early destruction of yellow-pine forests threatened by years of careless management.

Experiments conducted by the United States Forest Service at Ocilla, Ga., and Green Cove Springs, Fla., as well as definite and reliable data received from operators throughout the naval-stores belt, have effectively determined the great advantages of the new methods over the old. Not only has it been shown forcibly that the conservative methods are of great protection to the forests, but sufficient data has been collected to show that the increase in yield of both turpentine and rosin by the new and improved systems furnishes a strong argument in favor of their use.

Reports from the states where naval stores are produced show that where there is a greater percentage of turpentine produced by improved methods there is also a greater yield. The following table gives the average yield of turpentine per crop of 10,500 boxes or cups, reported and compiled by states, together with the percentage of turpentine produced in each state by either the cup-and-gutter or cup-and-apron systems:

State	Yield per crop, casks	Percentage*
Alabama .....	35.6	.08
Florida .....	29.8	.16
Georgia .....	26.5	.09
Louisiana .....	44.7	.44
Mississippi .....	34.5	.11
Texas .....	43.5	.49

\*Produced by improved methods.

To demonstrate more fully that the use of improved methods is largely responsible for the remarkable increase shown, the reports from two of the large establishments in Texas, one using the cup-and-apron system and the other cutting boxes into the tree, are compared. The establishment using the cup-and-apron system reported a yield of 1,372 barrels of turpentine for twenty crops, as against a yield of 1,500 barrels of turpentine for thirty-five crops where the old methods were employed, 68.2 casks per crop for the cup-and-apron system as against 42.8 for boxes.

Both companies were operating for the first year, and timber and weather conditions were practically the same. The two establishments reporting these figures employ a

high standard of business methods and the figures given are reliable. Forty-two barrels is considered a fair average yield for the first year the trees are bled and where boxes are used.

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### China Begins Education in Forestry

China, often called the most backward of nations in the care of natural resources, is to be the scene of a vigorous campaign in the interests of the forests, according to plans for a series of meetings which will be held under the auspices of Boone College, Wuchang, China, at Hankow, Wuchang, and Hanyang. Later there will be meetings in all the large cities and important ports both on the coast and in the interior. Mr. Howard Richards, Jr., the representative in this country of the Chinese college, has been collecting material for these courses, and has just started for China. Several of the photographs showing the effect of deforestation in China, which accompanied the President's last annual message to Congress, form a part of a set of stereopticon views which will be used in illustrating these lectures.

China has probably taken less care of her forests than any other nation of the earth, and this movement to awaken in its people a realization of the importance of the forest comes at an opportune time. Many parts of China are practically desert wastes as a direct result of the destruction of its trees. On account of the erosion which has followed the removal of trees from the slopes, farmers are compelled to terrace their hill-sides, in order to hold enough soil in place for farming, and to build little walls across the valleys to catch the silt which the annual floods deposit. Two centuries ago, many regions of China which are now barren were paying revenue to their owners. Now the wood supply is so scarce that little poles are used for building houses, and roots and saplings are burned as fuel.

Over 300 Chinese students from eleven provinces are being educated in Boone College for the uplift of their country, and it is expected by those in charge of the proposed course of lectures that a movement started there will in time spread throughout the empire.



### Children Plant Trees

The prairie town without trees is cheerless and unattractive. Few things add more to the attractiveness of a town than rows of thrifty shade trees planted along its streets.

Village and town improvement societies and civic associations have done much to promote tree-planting, especially in the prairie regions of the middle West. Where trees adapted to local conditions have been planted, and where the citizens have cared for them and taken an interest in them, the results have been remarkable.

A public-spirited man residing in a city in Missouri has been doing commendable work along this line, in connection with the Civic Improvement League of his city. In the year 1901 he planted a large quantity of seeds of various trees in nursery rows. He carefully tended the young seedlings, and, a few years later, dug them up, labeled them, and turned them over to the school children free, upon condition that they should be planted and cared for.

Since the trees started life with the beginning of the present century, they were called "century trees," and this gave them additional interest.

Each child was given printed directions, which were headed as follows:

"Ornament your homes. Plant century trees, seedlings of 1901. They are living monuments; watch them develop. They began with the century, and the century, as it advances, marks the record of their age year by year."

Those who received trees were directed to dig holes two feet in diameter and one and one-half feet deep. They were told to keep the roots of the trees moist and covered until planted, to see that all torn ends of roots were cut off smoothly, and to cut back the side branches about a quarter or third of their length, or, if the tree was a straight shoot, without branches, to cut back the tip a few inches. This pruning was to balance the loss of roots in digging up the trees.

In planting the tree, they were told to spread the roots out into natural position, and to set the tree about an inch deeper in the ground than it stood in the nursery; to use good, rich soil, but to allow no fertilizer or mulch to come into direct contact with the roots; to work the soil carefully about the roots, and to water the tree plentifully every few days after it was set out, and during the dry weather of summer.

Five or six thousand trees were given away in this manner. Two or three trees were given to each child who asked for them, and almost every child did so. There were many species, and naturally some died, but few children lost all that they planted. Each child who received trees was required to fill out a slip giving his name and address, and the place where the tree was planted. The trees in public places will be labeled when they have grown somewhat larger.

The town is now dotted with these little "century trees," which have become the pride of those who planted them.

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### Utilizing Natural Gas

Speaking of the ineffective attempts of the states of Oklahoma and Indiana to prevent the export of natural gas, Mr. Godfrey L. Cabot, of Boston, writing to the *Boston Transcript*, says:

"There is no commodity whose export and freedom of transportation is relatively so important as natural gas, because there is no form of wealth, from its physical nature, so subject to waste. By far the greater portion of natural gas which has been produced up to this time has been absolutely wasted, and it is not likely that five per cent. of the natural gas at present produced in Oklahoma is put to any useful purpose. The greatest waste results from the fact that most of the petroleum oil produced in this country, and in particular the petroleum oil found in Oklahoma, Pennsylvania, West Virginia, Indiana, Ohio, Kentucky, Tennessee, Illinois, Louisiana, and New York, is associated with a large amount of gas, which is usually allowed to escape into the open air. Even the large operators such as the Standard Oil Company, or rather the various producing branches of the Standard Oil Company, have made little attempt to utilize the gas off the oil, except locally in connection with the production of the oil itself, and considering the fact that the amount of gas sold in the year 1907 was estimated by the United States Geological Survey at nearly fifty-three millions of dollars, there is no question that many hundreds of millions of dollars' worth of natural gas have been absolutely wasted in this country since the systematic exploitation of oil began in the year 1859, and it is very regrettable that the Standard Oil Company, and other large operators, who have shown great economy and wisdom in the handling of oil, have in most cases ignored the immense waste of gas.

"I am, myself, buying this gas off the oil in very large quantity, at a cent and a half a thousand, and gas having more than half again as much energy per cubic foot as the best illuminating gas, and I seek through your columns to give the widest possible publicity to the fact that here is an immense field for legitimate enterprise, to gather together this gas off the oil; pump it through gas lines to market, and thus utilize a natural resource which cannot be replaced by any method known to man, and which is, at present, subject to greater proportional waste than any other valuable asset that I can think of."



### Increased Need for Private Forestry

"In its application to the management of private holdings forestry has lagged far behind its record of progress on the National Forests," says the Secretary of Agriculture in his annual report. "With a fast-diminishing timber supply and steadily-rising lumber prices, the vast bulk of our cutting is done destructively. This is a matter which seriously concerns the public welfare.

"Ten years ago the Department of Agriculture offered, in pursuance of investigations in forestry, and in order to disseminate a knowledge of improved ways of handling forest lands, to cooperate with private owners through expert advice and assistance in planning and putting into practise forest management for their holdings. The investigations thus made possible were of the first importance. But for them the Government would have been altogether unprepared to undertake six years later the scientific management of the National Forests. They were, in fact, the foundation and virtually the beginning of practical forestry in the United States.

"This offer has never been withdrawn. The work which its fulfilment involved was the chief cause of the rapid growth of the Forest Service between 1898 and 1905. Since 1905, however, the necessity of providing first of all for the needs of the National Forests has compelled curtailment of expenditures for general investigations, since neither men nor money have been available to carry them on. There has been a steady increase in the number of informal applications, but many of these were not encouraged to fill out the necessary blanks, since neither men nor money were available to make the examination.

"There is urgent need to enlarge this work. The time is ripe for a widespread taking up of forestry by private owners of timberland, large and small, if the Forest Service can be in a position to guide and assist a general movement through fulfilment of its offer. None of the National Forests is east of the Mississippi River, and nine-tenths of the expenditures of the Service are on behalf of the National Forests. It is a national duty to protect and put to best use this great resource which is directly un-

der the charge of the Government; but it is no less a national duty to promote in the East the spread of methods through which this part of the country also can preserve its forests."

\*\*\*

### Condition of Forest Resources

The forests of the United States now cover about 550,000,000 acres, or about one-fourth of the land of the whole country. The original forests covered not less than 850,000,000 acres, or nearly one-half.

The forests owned by the Government cover one-fourth of the total forest area and contain one-fifth of all timber standing. Forests privately owned cover three-fourths of the area, and contain four-fifths of the standing timber. Besides having three times the area and four times the forests, the timberland privately owned is generally more valuable.

Forestry, or conservative lumbering, is practised on seventy per cent. of the forests publicly owned and on less than one per cent. of the forests privately owned. This covers the country's forest resources as they stand to-day. Senator Smoot, chairman of the section of forests of the National Conservation Commission, in outlining the future, has said:

"By reasonable thrift, we can produce a constant timber supply beyond our present need, and with it conserve the usefulness of our streams for irrigation, water supply, navigation, and power.

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"We shall suffer for timber to meet our needs until our forests have had time to grow again. But if we act vigorously and at once, we shall escape permanent timber scarcity."

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The Index to CONSERVATION and FORESTRY AND IRRIGATION for 1908 will shortly be ready, and will be furnished without charge to all members and subscribers on application.



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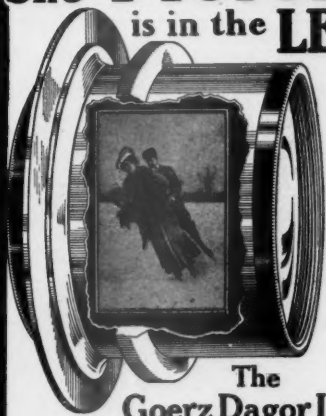
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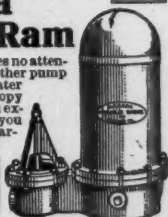
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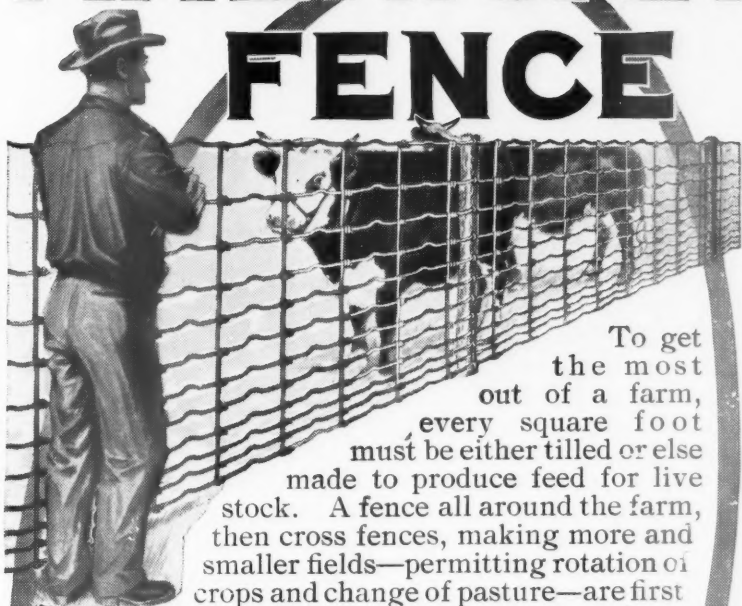
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